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# CTE PROGRAM INDUSTRY SPECIFIC STANDARDS

**High School Graduate Achievement Required for Entry-level Work**

Career & Technical Education Board / Trust approved standards for student expectations related to work, training, and education preparedness.

RIDE

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## Priority Sector: Automotive Technology

### Career Field: Automotive Body Repair Technician

**Skills/ knowledge needed to be prepared for entry-level work:**

- Review damage reports, prepare cost estimates, and plan work
- Inspect cars for structural damage
- Remove damaged body parts, including bumpers, fenders, hoods, grilles, and trim
- Realign car frames and chassis to repair structural damage
- Hammer out or patch dents, dimples, and other minor body damage
- Fit, attach, and weld replacement parts into place
- Sand, buff, and prime refurbished and repaired surfaces
- Apply new finish to restored body parts

**Curriculum:** I-CAR - Collision Repair Curriculum for Career and Technical Schools. The curriculum is aligned 376 NATEF standards. The curriculum is cross referenced to Common Core Reading and Math Competencies.

**Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):** I-Car Level II.

**Prerequisites for acquiring credential or certificate:** Complete I-Car Level I and course work / professional develop for I-Car Level II.

**Benefits of this level of achievement in job market:** Automotive Body Repair Technician is employed by dealerships, service centers and automotive parts stores.

**US Department Labor Statistics:**

**Job Outlook:** Employment of automotive body and glass repairers is projected to grow 9 percent from 2014 to 2024, faster than the average for all occupations. Job opportunities should be very good for jobseekers with industry certification and formal training in automotive body and glass repair.

**Pay:** The median annual wage for automotive body repair technician was \$39,890.00 (\$19.18 per hour) in May 2014.

**Similar Occupations:** Compare the job duties for auto body repair with responsibilities of Automotive Service Technicians and Mechanics, Diesel Service Technicians, Glaziers, Heavy Vehicle Technicians and Painting and Coating Workers as reference for similar occupations.

**Instructor Certification Require:** Secondary Automotive Body Repair Technician is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

## Priority Sector: Automotive Technology

### Career Field: Lube Technician

#### Skills/ knowledge needed to be prepared for entry-level work:

1. Performs work as outlined on repair order with efficiency and accuracy, in accordance with dealership and factory standards.
2. Sells lubrication, safety inspection, and other related services.
3. Maintains records on regular customers, following up periodically with telephone, mail, or personal reminders.
4. Drains oil from crankcase and refills with required amount of oil. Replaces oil and air filters.
5. Inspects vehicle fluid levels, replaces or replenishes as necessary. Checks tire pressure and adds air if needed.
6. Lubricates moving parts with specified lubricants. Communicates with parts department to obtain needed parts. Documents all work performed on the repair order.
7. Keeps abreast of manufacturer technical bulletins.
8. Ensures that customers' cars are kept clean. Notifies service advisor immediately of anything that has happened to change the appearance or condition of the vehicle.
9. Understands, keeps abreast of, and complies with federal, state, and local regulations, such as hazardous waste disposal, OSHA Right-to-Know, etc.
10. Operates all tools and equipment in a safe manner. Reports any safety issues immediately to management.

**Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):** N/A

**Prerequisites for acquiring credential or certificate:** N/A

**Benefits of this level of achievement in job market:** Many Lube Technicians build on their experience and go on to become ASE certified automotive service technicians.

**Job Outlook** - Employment of automotive service technicians, including Lube Technicians, is projected to grow 5 percent from 2014 to 2024, about as fast as the average for all occupations. In Rhode Island, close to 30% of automotive service technicians will be in need of replacement by 2022.

**Pay** - The median annual wage for lube technicians was \$20,924 (\$10.06 per hour) in May 2014.

**Instructor Certification Require:** Secondary Automotive Technology/Lube Technician is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

## Priority Sector: Automotive Technology

### Career Field: Porter (Sales/Service)

#### Skills / knowledge needed to be prepared for entry-level work:

The Porter is responsible for assisting in processing vehicles through the service and reconditioning departments, keeping the lot clean and orderly to enhance the marketing of these vehicles as well as to enhance the professional image to customers and the public. The Porter will also assist with the orderly processing of lease turn-ins.

#### Sales:

1. Assist in preparing vehicles for retail sale by processing vehicles through the service and reconditioning departments.
2. Insure that inventory is clean and properly displayed and aligned at all times.
3. Assist sales staff with the delivery process as needed, including, but not limited to, putting fuel in vehicles, parking vehicles in designated area, assisting with inspection process, checking on vehicle cleanliness, mileage, etc.
4. Park cars in assigned areas.
5. Will be required to attend 4-hour defensive driver training.
6. Exemplary driving record

#### Service:

1. Greeting customers arriving in service drive and direct them to the consultants.
2. Park cars in assigned areas.
3. Responsible for assisting service department by processing vehicles through the service and reconditioning departments.
4. Responsible for transporting cars and repair orders from write up area to shop.
5. Recording damage of inventory valuables.
6. Responsible for insuring that customer's cars are clean prior to delivery.
7. Responsible for installing floor mats and seat covers.
8. Bring cars from wash area to service parking.

**Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):** N/A

#### Benefits of this level of achievement in job market:

**Job Outlook** - Employment of Vehicle Porters is projected to grow 12 percent from 2014 to 2024, faster than the average for all occupations.

**Pay** - The median annual wage for Vehicle Porters was \$22,880 (\$11.00 per hour) in May 2014.

**Instructor Certification Required:** Secondary Automotive Technology/Porter (Sales/Service) is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

## Priority Sector: Automotive Technology

### Career Field: Shipping and Receiving Clerk

**Skills/ knowledge needed to be prepared for entry-level work:** The Shipping and Receiving Clerk verifies and keeps records on incoming and outgoing shipments and prepares items for shipment:

1. Count, weigh, or measure items in incoming and outgoing shipments to verify information against bills of lading, invoices, orders, and other records
2. Determine method of shipment, utilizing knowledge of shipping procedures, routes, and rates
3. Affix shipping labels on packed cartons, or stencil identifying shipping information on cartons, using stenciling equipment
4. Assemble wooden or cardboard containers, or select preassembled containers
5. Insert items into containers, using spacers, filters, and protective padding
6. Stamp, stencil, or glue identifying information and shipping instructions onto crates or containers
7. Post weights and shipping charges, and affix postage
8. Unpack and examine incoming shipments, reject damaged items, record shortages, and correspond with shipper to rectify damages and shortages
9. Ensure that outgoing shipping meet specifications
10. Maintain inventory of shipping materials and supplies
11. Operate tier-lift truck or use hand truck to move, convey, or hoist shipments from shipping-and-receiving platform to storage or work area
12. Direct others in preparing outgoing and receiving incoming shipments
13. Receive damaged or defective goods returned to establishment and be designated Returned Goods, Receiving Clerk
14. Receive unsold products returned by Parts Driver and put back into inventory
15. Valid Driver's license

(The successful candidate must demonstrate the ability to read and comprehend instructions and information. One year of experience in a dealership position. Further, an employee must be proficient with Reynolds and Reynolds, calculator, motor vehicle, and tier-lift and hand trucks. Ability to use mechanical tools such as crimpers, pliers, wrenches, and tape measure.)

**Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):** N/A

**Prerequisites for acquiring credential or certificate:** Expanded internship supports s

**Benefits of this level of achievement in job market:**

**Job Outlook** - Employment of shipping and receiving clerks is projected to grow 3 percent from 2014 to 2024, lower than the average for all occupations, but with a high rate of replacement through 2024.

**Pay** - The median annual wage shipping and receiving clerks was \$32,350 (\$15.56 per hour) in May 2014.

**Instructor Certification Require:** Secondary Automotive Technology/Shipping and Receiving Clerk is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.



## Priority Sector: Automotive Technology

### Career Field: Automotive Service Technician

#### Skills/ knowledge needed to be prepared for entry-level work:

1. Perform work specified on the repair order with efficiency
2. Test-drive vehicles, and test components and systems, using diagnostic tools and special service equipment
3. Communicate directly with the Service Advisor so that customers can be informed if any additional service is needed. Providing an estimate of time needed for additional repairs
4. Identify problems, often by using computerized diagnostic equipment
5. Plan work procedures, using charts, technical manuals, and experience
6. Test parts and systems to ensure that they work properly
7. Follow checklists to ensure that all critical parts are examined
8. Perform basic care and maintenance, including changing oil, checking fluid levels, and rotating tires
9. Repair or replace worn parts, such as brake pads, wheel bearings, and sensors
10. Perform repairs to manufacturer and customer specifications
11. Explain automotive problems and repairs to clients
12. Keep shop area neat and clean and be able to account for all dealership-owned tools at all times.
13. Understand & follow federal, state and local regulations, such as those governing the disposal of hazardous wastes.

**Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):** Rhode Island's Automotive Technology CTE programming aims to prepare students for certification through the Automotive Service Excellence (ASE) examinations.

**Prerequisites for acquiring credential or certificate:** As of September 2016: Rhode Island will be adopting the CDX curriculum. CDX is used internationally and approved by the National Automotive Technicians Education Foundation (NATEF) and closely aligned to the ASE standards and examination tasks.

**Benefits of this level of achievement in job market:** Automotive service technicians are employed by dealerships, service centers and automotive parts stores.

**Job Outlook** - Employment of automotive service technicians and mechanics is projected to grow 5 percent from 2014 to 2024, about as fast as the average for all occupations. In Rhode Island, close to 30% of automotive service technicians will be in need of replacement by 2022.

**Pay** - The median annual wage for automotive service technicians was \$37,856 (\$18.20 per hour) in May 2014.

**Instructor Certification Require:** Secondary Automotive Technology/Automotive Service Technician is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

## Priority Sector: Business Management, Administration, Finance & Marketing

### Career Field: Accounting Clerk, Entry-Level Banking

This standard prepares high school graduates: 1) to graduate fully prepared to earn and hold a position in entry-level banking or as an accounting clerk, and 2) to enter a business program at the post-secondary level.

**Skills/ knowledge needed to be prepared for entry-level work:** Upon successful completion of a RIDE approved Business Management, Administration & Finance pathway, the candidate is expected to be financially literate and be able to continue the business training at a post-secondary level. To satisfy this expectation it is recommended that an assessment for financial literacy be integrated within the financial concentration of the pathway, as a milestone measure. The Rhode Island Treasurer's Financial Scholars Program (EVERFI) is acceptable. If the students decides to pursue an industry position following high school then successful completion of the Business pathway (including fulfilling the requirement below) will help the student secure entry-level work in the field.

#### Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):

Bookkeeping, accounting, and auditing clerks usually get on-the-job training. Under the guidance of a supervisor or another experienced employee, new clerks learn how to do their tasks, including double entry bookkeeping. In double entry bookkeeping, each transaction is entered twice, once as a debit (cost) and once as a credit (income), to ensure that all accounts are balanced.

Some formal classroom training also may be necessary, such as training in specialized computer software. This on-the-job training typically takes around six months

These requirements are summarized in the following table

*Each column must be met to satisfy the requirements of the Rhode Island CTE Business Standard*

Minimum Academic Requirement		Mandatory Credential(s) Earned		Secondary Credential (at least one)		Work based Experience
Three consecutive years of business coursework  & <u>Recommended coursework in:</u> -Management -Accounting -Finance -Digital Marketing	+	Rhode Island Financial Scholars Program  & <u>At least one</u> of the following: *NOCTI Certification *ASK Certification *NAFTrack Certification	+	QuickBooks  or National Retail Federation (NRF) Customer Service Certification	+	Business industry work based learning experience and/or related mentor program

*\* Please see the list of acceptable credentials below.*

**Job Outlook:**

Demand for bookkeeping is tied particularly to the growth of small businesses, which tend to hire bookkeepers rather than accountants due to their relatively lower cost. Therefore, economic growth should create some openings for bookkeepers to keep these organizations' financial records. Because bookkeeping, accounting, and auditing clerks make up a large occupation, there will be a large number of job openings from workers leaving the occupation. Thus, opportunities to enter the occupation should be plentiful.

**Pay:**

The median annual wage for bookkeeping, accounting, and auditing clerks was \$38,390 in May 2016. The median wage is the wage at which half the workers in an occupation earned more than that amount and half earned less. The lowest 10 percent earned less than \$23,880, and the highest 10 percent earned more than \$59,630.

**\*Acceptable NOCTI certifications include:**

1. Accounting Advanced & Basic Assessment
2. Accounting Basic Assessment
3. Business Financial Management Assessment
4. Financial and Investment Planning Assessment
5. General Management Assessment

**\*Acceptable ASK certifications include:**

1. Concepts of Entrepreneurship and Management
2. Concepts of Finance
3. Fundamental Business Concepts
4. Fundamental Marketing Concepts

**\*NAFTrack:**

- High schools offering NAFTrack certification must be accredited themselves by the National Academy Foundation (NAF). Accreditation is granted following a rigorous evaluation process during the NAF guided Year of Planning (YOP). For additional information: NAF.
- NAFTrack ensures college and career readiness by combining classroom and workplace learning as a measure for career and skill proficiencies.
- NOCTI administers NAFTrack Certifications.

**NAFTrack certification preparation requires at least four of the following (or equivalents) depending on career choice:**

- Principles of Finance, Applied Finance, Financial Planning, Financial Services
- Business Economics, Business in a Global Economy, Entrepreneurship, Ethics in Business
- Insurance
- Managerial Accounting, Principles of Accounting.
  1. with the addition of an intensive internship in a business that reflects the student's career selection
- Integrated work-based learning projects
- Successful passing of industry vetted assessments of student academic proficiency and career-based skill sets

Upon successful completion of NAFTrack Certification, students are eligible for NAFTrack Certified Hiring.

## Priority Sector: Construction Technology

### Career Field: Junior Carpenter Helper

#### Skills/knowledge needed to be prepared for entry-level work:

1. Orientation to the trades;
2. Safety (OSHA 10);
3. Related construction math and blueprint reading;
4. Construction issues and resolutions;
5. Construction materials and methods;
6. Construction technology related drawings;
7. Technology specific equipment and basic operational techniques;
8. Quality control;
9. Internship;
10. Human relations and problem solving.

**Required Curriculum:** National Center for Construction Education Research (NCCER)

**Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):** National Center for Construction Education Research (NCCER) certificate for *Core Technology* (mandatory) and Construction Technology specific NCCER certification (Level 1 and Level 2).

**Prerequisites for acquiring credential or certificate:** NCCER *Core Technology*.

**Benefits of this level of achievement in job market:** NCCER certificates for Level 1 and Level 2 prepare secondary program graduates with the necessary skills to attain entry-level employment in the construction pathway. Further, there is a postsecondary benefit as many components of the NCCER curriculum are articulated at local/national postsecondary schools.

**Job Outlook\*** - Employment of construction laborers and helpers is projected to grow 13 percent from 2014 to 2024, faster than the average for all occupations. Laborers and helpers work in all fields of construction, and demand for these workers will mirror the level of overall construction activity.

**Pay\*\*** - The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for Junior Carpenter Helper at that time was \$30,888.00 (\$14.85 per hour).

**Instructor Certification Requirements:** Secondary Construction Technology is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

\* US Department of Labor; Bureau of Labor Statistics; *Occupational Outlook Handbook*

\*\* RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics

## Priority Sector: Construction Technology

### Career Field: Electrical Apprentice

#### Skills/knowledge needed to be prepared for entry-level work:

1. Orientation to the trade;
2. Safety (OSHA 10);
3. Relevant math and drawings;
4. Issues and resolutions;
5. Materials and methods;
6. Construction technology related drawings;
7. Technology specific equipment and basic operational techniques;
8. Quality control;
9. Human relations and problem solving.

**Required Curriculum:** National Center for Construction Education Research (NCCER) *Electrical Level 1 & Electrical Level 2*

**Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):** National Center for Construction Education Research (NCCER) certificate for Core Technology (mandatory) and Construction Technology specific NCCER certification (Level 1 and Level 2) and related apprentice hours.

**Prerequisites for acquiring credential or certificate:** NCCER *Core Curriculum*.

**Benefits of this level of achievement in job market:** NCCER certificates for Level 1 and Level 2 prepare secondary program graduates with the necessary skills to attain entry-level employment as an apprentice. Further, there is a postsecondary benefit as many components of the NCCER curriculum are articulated at local/national postsecondary schools and training providers.

**Job Outlook** - Employment of electricians is projected to grow 14 percent from 2014 to 2024, much faster than the average for all occupations. As homes and businesses require more wiring, electricians will be needed to install the necessary components. The job prospects for electricians should be very good, as many employer's report difficulty finding qualified applicants.

**Pay** – The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for residential Electrician at that time was \$39,811.00 (\$19.14 per hour).

**Instructor Certification Requirements:** Secondary Construction Technology is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

\* US Department of Labor; Bureau of Labor Statistics; *Occupational Outlook Handbook*

\*\* RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics

## Priority Sector: Construction Technology

### Career Field: HVAC Apprentice

#### Skills/knowledge needed to be prepared for entry-level work:

1. Orientation to the trades;
2. Safety (OSHA 10);
3. Relevant construction math and drawings;
4. Construction issues and resolutions;
5. Construction materials and methods;
6. Construction technology related drawings;
7. Technology specific equipment and basic operational techniques;
8. Quality control;
9. Internship
10. Human relations and problem solving.

**Required Curriculum:** National Center for Construction Education Research (NCCER)

#### Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

National Center for Construction Education Research (NCCER) certificate for Core Technology (mandatory) and Construction Technology specific NCCER certification (Level 1 and Level 2) and related apprenticeship hours.

**Prerequisites for acquiring credential or certificate:** NCCER Core Technology.

**Benefits of this level of achievement in job market:** NCCER certificates for Level 1 and Level 2 prepare secondary program graduates with the necessary skills to attain entry-level employment in the construction pathway. Further, there is a postsecondary benefit as many components of the NCCER curriculum are articulated at local/national postsecondary schools.

**Job Outlook:** Employment of heating, air conditioning, and refrigeration mechanics and installers is projected to grow 14 percent from 2014 to 2024, much faster than the average for all occupations. Candidates familiar with computers and electronics and those with good troubleshooting skills will have the best job opportunities as employers continue to have difficulty finding qualified technicians to install, maintain, and repair complex new systems.

**Instructor Certification Requirements:** Secondary Construction Technology is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

\* US Department of Labor; Bureau of Labor Statistics; *Occupational Outlook Handbook*

\*\* RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics

## Priority Sector: Construction Technology

### Career Field: Plumber Apprentice

#### Skills/knowledge needed to be prepared for entry-level work:

1. Orientation to the trades;
2. Safety (OSHA 10);
3. Understanding of Plumbing Technology related equipment and supplies;
4. Construction math and drawings;
5. Construction issues and resolutions;
6. Materials and methods;
7. Construction technology related drawings;
8. Technology specific equipment and basic operational techniques;
9. Quality control;
10. Internship;
11. Human relations, strong interpersonal skills, customer service skills and problem solving.

**Required Curriculum:** National Center for Construction Education Research (NCCER)

#### Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

National Center for Construction Education Research (NCCER) certificate for *Core Technology* (mandatory) and Construction Technology specific NCCER certification (Level 1 and Level 2) and related earned apprenticeship hours.

**Prerequisites for acquiring credential or certificate:** *NCCER Core Technology*. Due to the physical nature of this work it is likely an employer will require a new hire to secure a physical exam prior to employment.

**Benefits of this level of achievement in job market:** NCCER certificates for Level 1 and Level 2 prepare secondary program graduates with the necessary skills to attain entry-level employment in the construction pathway. Further, there is a postsecondary benefit as many components of the NCCER curriculum are articulated at local/national postsecondary schools.

**Job Outlook\*** - Employment of plumbers, pipefitters, and steamfitters is projected to grow 12 percent from 2014 to 2024, faster than the average for all occupations. Construction of buildings which need new plumbing systems should drive demand for these workers. Overall job opportunities are expected to be good, with some employers continuing to report difficulty finding qualified workers.

**Pay\*\*** – The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for Plumbers at that time was \$39,187.00 (\$18.84 per hour).

**Instructor Certification Requirements:** Secondary Construction Technology is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

\* US Department of Labor; Bureau of Labor Statistics; *Occupational Outlook Handbook*

\*\* RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics

## Priority Sector: Construction Technology

### Career Field: Welder – Entry-level

#### Skills/knowledge needed to be prepared for entry-level work:

1. Orientation to the trades;
2. Safety (OSHA 10);
3. Relevant math and drawings;
4. Issues and resolutions;
5. Related materials and methods;
6. Welding technology related drawings;
7. Technology specific equipment and basic operational techniques;
8. Quality control;
9. Human relations and problem solving.

**Required Curriculum:** National Center for Construction Education Research (NCCER)

**Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):** National Center for Construction Education Research (NCCER) certificate for *Core Technology* (mandatory) and Construction Technology specific NCCER certification (Level 1 and Level 2).

**Prerequisites for acquiring credential or certificate:** NCCER *Core Technology* and NCCER *Introduction to the Maritime Industry*.

**Benefits of this level of achievement in job market:** NCCER certificates for Level 1 and Level 2 prepare secondary program graduates with the necessary skills to attain entry-level employment in the construction pathway. Further, there is a postsecondary benefit as many components of the NCCER curriculum are articulated at local/national postsecondary schools.

**Job Outlook\*** - Employment of welders, cutters, solderers, and brazers is projected to grow 4 percent from 2014 to 2024, slower than the average for all occupations. Despite slower than average employment growth, skilled welders with up-to-date training should have good job opportunities.

**Pay\*\*** – The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for Welders at that time was \$35,048.00 (\$16.85 per hour).

**Instructor Certification Requirements:** Secondary Construction Technology is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

\* US Department of Labor; Bureau of Labor Statistics; *Occupational Outlook Handbook*

\*\* RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics



## Priority Sector: Construction Technology

### Career Field: Sheet Metal Apprentice

#### Skills/knowledge needed to be prepared for entry-level work:

1. Orientation to the trades;
2. Safety (OSHA 10);
3. Relevant construction math and drawings;
4. Construction issues and resolutions;
5. Construction materials and methods;
6. Construction technology related drawings;
7. Technology specific equipment and basic operational techniques;
8. Quality control;
9. Internship;
10. Human relations and problem solving.

**Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):** National Center for Construction Education Research (NCCER) certificate for Core Technology (mandatory) and Construction Technology specific NCCER certification (Level 1 and Level 2).

**Prerequisites for acquiring credential or certificate:** NCCER *Core Technology* and NCCER *Introduction to the Maritime Industry*.

**Benefits of this level of achievement in job market:** NCCER certificates for Level 1 and Level 2 prepare secondary program graduates with the necessary skills to attain entry-level employment in the sheet metal trades. Further, there is a postsecondary benefit as many components of the NCCER curriculum are articulated at local/national postsecondary schools.

**Job Outlook\*** - Employment of sheet metal workers is projected to grow 7 percent from 2014 to 2024, about as fast as the average for all occupations. Job opportunities should be particularly good for sheet metal workers who complete apprenticeship training or are certified welders.

**Pay\*\*** – The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for Sheet Metal Apprentice is \$35,235.00 (\$16.94 per hour).

**Instructor Certification Requirements:** Secondary Construction Technology is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

\* US Department of Labor; Bureau of Labor Statistics; *Occupational Outlook Handbook*

\*\* RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics

## Priority Sector: Education, Training & Human Services

### Career Field: Education (Education, Child Care, Teacher Assistant)

This standard is for a high school graduate who is both prepared to enter a teacher preparation program at the postsecondary level and be “job ready” as a teacher assistant or childcare employee.

**Skills/ knowledge needed to be prepared for entry-level work:** Upon successful completion of a RIDE approved Education, Training, and Human Services pathway, the candidate is expected to demonstrate the following:

- **Communication skills:** Teacher assistants need to discuss students’ progress with teachers and parents, so they need to be able to communicate well. Strong written and oral communication skills.
- **Interpersonal skills:** Teacher assistants interact with a variety of people, including teachers, students, parents, and administrators. They need to develop good working relationships in their job.
- **Patience:** Working with students of different abilities and backgrounds can be difficult. Teacher assistants must be patient with students who struggle with material.
- **Resourcefulness:** To reinforce lessons, teacher assistants must explain information to students in a way that meets each student’s learning style. Teacher assistants should be self-motivated, demonstrate problem-solving skills and demonstrate willingness to continually grow and learn as a professional.
- **Professional Skills:** Teacher assistants should act in a professional manner at all times, be dependable, reliable, understand and demonstrate confidentiality, be able to pass a BCI check and maintain high level of ethical behavior.

**Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):** High school students interested in becoming a teacher, child care employee, teacher assistant, or who are pursuing a career in human services should take, at a minimum, a standard high school curriculum and complete the CTE course sequence in the Education pathway. Students who are interested in pursuing a four-year college program should ensure they are completing the requirements for acceptance into those post-secondary programs.

These requirements are summarized in the following table *and each column must be met to satisfy the requirements of the Rhode Island CTE Education Pathway:*

Minimum Academic Requirement	Safety	Mandatory Credential Earned (at least one)	Optional Credentials	Work-based Experience
<ul style="list-style-type: none"> <li>• 4 courses in English</li> <li>• 4 courses in Math</li> <li>• 3 courses in Science</li> <li>• 3 courses in S. Studies</li> </ul> At least one course in both technology and the arts	First Aid / CPR & AED Training	Completion of an approved Teacher Assistant Training program  and/or  Attain the minimum passing score on the RI Parapro Exam	Rhode Island Early Learning and Development Standards Certificate	Internship Experience <ul style="list-style-type: none"> <li>• Placement in a K-12 educational setting should be with a certified and tenured teacher</li> <li>• Early Childhood placement should be in a center with Bright Stars affiliation</li> </ul>

At least a minimum of three consecutive years of coursework in Education Pathway (to include birth to 21 with embedded content in English Language Learners (ELL) and children with special needs)			OSHA 10 Certificate	
			Red Cross Babysitting & Child Care Certificate	
<u>Recommended Coursework in:</u> Psychology Sociology Ethical Issues Financial Literacy				

**Other resources:** Educators Rising (<https://www.educatorsrising.org/>) Future Teachers of America (<http://futureteachers.org/>), Teacher Cadet Program (<https://www.teachercadets.com/teacher-cadets-overview.html>) HYPERLINK "<http://futureteachers.org/>"

**Job Outlook:** Per the Rhode Island Department of Labor and Training Occupational Outlook 2024, demand for educational jobs is expected to grow 4% over the ten-year period from 2014-2024; in addition, growth in the related field of community and social services is expected to grow 7.6% over the same ten-year period. This is above the rate of both the Rhode Island (7.1%) and national (6.5%) projected labor market growth for the same ten year period.

Immediate employment opportunities in the Education, Training, and Human Services field include PK-12 public school teacher assistant, Behavioral Assistant/Specialist, and Child Care teacher assistant (includes center based, school age and family childcare).

Post-Secondary employment opportunities include PK-12 teacher (early childhood, elementary, middle, high school, dual language), Child Care Center head teacher, Behavioral Specialist, and Social Services employee.

**Pay:** According to the RI Department of Labor and Training Labor Market Information, the median annual salary for all teachers and instructors, except substitute teacher, is from \$79,550 to an experienced median wage of \$101,900. The median entry-level annual salary for a PK-12 public school teacher assistant in Rhode Island is from \$30,070 to an experienced median wage of \$36,350.

<http://www.dlt.ri.gov/lmi/oes/statealpha.htm>

**Instructor Certification Require:** An Education, Training, and Human Services educator is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

## Priority Sector: Environmental & Life Sciences

### Career Field: Animal Science Veterinary Assistant / Lab Animal Caretaker

This standard prepares students: to graduate from high school prepared and ready to seek an entry-level position as a Veterinary Assistant, and to enter an Environmental and Life Sciences post-secondary program.

**Skills/knowledge needed in order to be prepared for entry-level work:** Upon successful completion of a RIDE Approved Environmental and Life Sciences Pathway, the candidate is expected to have a working knowledge of the following and be able to apply this knowledge in a variety of situations.

- Animal management, husbandry and handling
- Animal body systems, health, nutrition, genetics and reproduction
- Animal production systems
- Companion animal care and management

**Expected industry credential (s) and/or certificate (s) granted upon successful completion of the pathway (if applicable):** High school students interested in becoming a Veterinary Assistant should enroll in a three or four year Environmental and Life Sciences curriculum, along with four years of Math, and three years of Science, including Biology, and Chemistry. Anatomy and physiology are recommended. Students will be well versed in animal body systems, husbandry, and handling production. One of three choices for credentialing must be met, and students will complete OSHA 10 safety training.

**Requirements are summarized in the following table. Each column MUST be met to satisfy the requirements of the Rhode Island CTE Environmental and Life Sciences Standard.**

Academic Requirements		Safety Training		Mandatory Credential (s) Earned		Work-Based Experience (s) + Career Readiness Skills
Three / four consecutive years of Environmental & Life Sciences Coursework + Four years of Math + Three years of Science, to include Biology Recommended Coursework in: Chemistry Anatomy Physiology	+	OSHA 10	+	<b>One or more of the following:</b> National Occupational Competency Testing Institute (NOCTI) Small Animal Science and Technology Canine and Feline CPR and First Aid Certification Concurrent Enrollment in the College of Environmental and Life Science at URI Course – AVS 101	+	Environmental & Life Sciences work-based learning experience (s) and/or related mentoring program + <b>Career Readiness Skills Component, such as:</b> <ul style="list-style-type: none"> <li>• FFA LifeKnowledge</li> <li>• SkillsUSA Career Essential Suite</li> </ul>

**Job Outlook:** Per the US Bureau of Labor Statistics, the demand for Veterinary Assistants is expected to increase 9% over the ten-year period from 2014-2024. In 2014, there were approximately 73, 400 jobs.

**Pay:** According to the US Bureau of Labor statistics, the average starting salary is approximately \$25, 250.

**Instructor Certification Requirements:** Secondary Grades Agriculture Certification from the Rhode Island Department of Education.

**Environmental and Life Sciences Post-Secondary Options**

Two-Year Programs	Four-Year College and University Programs
<p><b><u>Associate in Applied Science programs include (examples):</u></b></p> <p>Animal Science</p> <p>Veterinary Assisting</p> <p><b><u>Sample Job Titles</u></b></p> <p>Veterinary Technician</p> <p>Veterinary Practice Manager</p> <p>Veterinary Assistant</p> <p>Laboratory Technician</p> <p>Livestock Manager</p> <p>Equine Manager</p>	<p><b><u>Bachelor of Science disciplines include (examples):</u></b></p> <p>Pre-Veterinary Medicine</p> <p>Animal Science</p> <p>Zoology</p> <p><b><u>Sample Job Titles</u></b></p> <p>Zoologist</p> <p>Wildlife Biologist</p> <p>Agricultural Educator</p> <p>Nutritionist</p> <p>USDA Animal and Plant Health Inspection Services</p> <p>Geneticist</p>

## Priority Sector: Environmental & Life Sciences

### Career Field: Aquaculture / Agricultural and Food Science Technician

This standard is for a high school graduate who is both prepared to enter a 2-4-year college program at the post-secondary level and be “job ready” as a technician in the Aquaculture/ Environmental & Life Science Industry.

**Skills/ knowledge needed to be prepared for entry-level work:** Upon successful completion of a RIDE approved Aquaculture Pathway, the candidate is expected to know and be able to:

Possess the experience and background knowledge to assist in a variety of tasks such as tank maintenance, water chemistry testing (titration and meter), small plant and animal aquatic husbandry, prepare and operate laboratory testing equipment, maintain a safe and sterile laboratory environment, set up experiments, run experiments, record data and observations, compile, analyze and summarize results, diagnose technical flaws in equipment, as well as conduct repairs.

Be prepared to run and maintain a fully functional greenhouse equipped with a hydroponic system. Germination, growth, and transition to soil are all part of the hydroponics system.

**Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):** High school students interested in the Aquaculture Industry should enroll in a three-year Environmental and Life Sciences Aquaculture curriculum and take four years of Math. The student must have a strong foundation in Science, including Physical Science, Biology, and Chemistry. It is also recommended that the student take Applied Pre-Calculus and Statistics classes to prepare for continued studies in a 2-4 year post-secondary institution. The student will successfully complete a college-level course in this field of study.

**Requirements are summarized in the following table. Each column must be met to satisfy the requirements of the Rhode Island CTE Aquaculture Standard.**

Academic Requirements		Safety Training		Mandatory Credential (s) Earned		Work-Based Experience (s) + Career Readiness Skills
<b>Three consecutive years of Environmental &amp; Life Sciences Aquaculture Coursework</b> + <b>Four years of Math</b> (Minimum: Algebra II, Recommended Pre-Calculus and Statistics) + <b>Three years of Science</b> Recommended fourth year (Biology, Chemistry and Physical Science with recommended <b>Advanced Placement Science</b> )	+	<b>Safety Training Component is Required</b>  Recommended:  <b>OSHA 10</b>	+	<b>College Level Courses in Field of Study:</b> Concurrent   Dual Enrollment   EEP	+	<b>Environmental &amp; Life Sciences Work-Based Learning experience(s) and/or related mentoring program.</b>  <b>Career Readiness Skills Component such as:</b> <ul style="list-style-type: none"> <li>• SkillsUSA Career Essentials Suite</li> <li>• Naviance</li> <li>• Junior Achievement</li> </ul>

**Job Outlook:**

Employment of aquaculture/ agricultural and food science technicians is projected to grow 5 percent from 2014 to 2024, about as fast as the average for all occupations. Advances in technology and scientific knowledge related to food production will require greater control of production and processing activities, increasing demand for these positions.

**Pay:**

The median annual wage for aquaculture/agricultural and food science technicians was \$37,550 in May 2016 (\$18.05 per hour).

**Instructor Certification Requirements:**

Aquaculture Instructors are certified by the Rhode Island Department of Education (RIDE) in Secondary General Science and Biology.

**Environmental & Life Sciences Post-Secondary Options:**

Two-Year Programs	Four-Year College and University Programs
<b><u>Sample Job Title/Median Annual Wage:</u></b> Chemical Technician (\$45,840) Agricultural Inspector (\$42,800)	<b><u>Sample Job Titles/Median Annual Wage:</u></b> Food Scientist and Technologist (\$63,950) Soil and Plant Scientist (\$63,200) Animal Scientist (\$60,330) Agricultural Engineer (\$73,640) Biological Technician (\$42,520)

<https://www.bls.gov/ooh/life-physical-and-social-science/agricultural-and-food-science-technicians.htm>

## Priority Sector: Environmental & Life Sciences

### Career Field: Bioscience

This standard is for a high school graduate who is prepared to enter a certified, lab-based science program at the secondary level and be 'job ready' as a Biomedical Science Technician/Technologist or Laboratory Technician/Assistant.

**Skills / knowledge needed in preparation for entry-level work within the Biomedical / Biotechnical field:** Upon completion of a RIDE Approved Environmental and Life Sciences pathway, the candidate is expected to: Demonstrate a well-developed "laboratory sense" regarding Safety Protocols (MSDS), ID and SDS data, FDA Regulations, cGMP, GLP, SOP writing, Sterile Gowning, Documentation, Basic Laboratory Instrumentation, Quality Control Functions in Microbiology and Chemistry, Record Keeping, Aseptic Handling, and Solution. Have knowledge of Medical Terminology, Documentation, Basic Mathematics and Computer skills (i.e. Word Processing and Spreadsheet Analysis), Medical Testing Equipment Knowledge, Medical History and Review of Systems Documentation Knowledge, Bloodborne Pathogens and Universal Precautions Knowledge). Demonstrate Soft-skills, including Interpersonal Communication, Teamwork and Collaboration, Critical Thinking, Conflict Resolution, Ethics, and Professional Demeanor.

**Expected industry credential(s) and/or certificate(s) granted upon successful completion of the pathway (if applicable):** High school students interested in becoming a Biomedical Science Technician / Technologist OR Laboratory Technician / Assistant should enroll in a three or four year Environmental and Life Sciences curriculum, along with four years of math, and three years of science, with a recommended fourth year. A safety training component is required (OSHA 10 recommended), and one or more of the credentials listed below, work-based learning experiences, and a career readiness component are required.

**Requirements are summarized in the table below. Each column MUST be met to satisfy the requirements of the Rhode Island CTE Environmental and Life Sciences Standard**

Academic Requirements		Safety Training		Mandatory Credential (s) Earned		Work-Based Experience (s) + Career Readiness Skills
<b>Three to four consecutive years of Environmental &amp; Life Sciences Coursework</b> <b>+</b> <b>Four years of Math</b>  (Minimum: Algebra II, Recommended Pre-Calculus and Statistics) <b>+</b> <b>Three years of Science</b> Recommended fourth year (Biology, Chemistry and Physical Science with Recommended <b>Advanced Placement Science</b> )	+	<b>Safety Training Component is Required</b>  Recommended:  <b>OSHA 10</b>	+	<b>One or more of the following:</b>  <b>National Occupational Competency Testing Institute (NOCTI)</b>  <b>Project Lead the Way (PLTW)</b> Three Project Lead the Way Course Completion Certificates  <b>Precision Exams in Related Field</b>  <b>College Level Courses in Field of Study:</b> Concurrent   Dual Enrollment   EEP	+	<b>Environmental &amp; Life Sciences Work-Based Learning experience(s) and/or related mentoring program.</b>  <b>Career Readiness Skills Component such as:</b>  <ul style="list-style-type: none"> <li>• SkillsUSA Career Essentials Suite</li> <li>• Naviance</li> <li>• Junior Achievement</li> </ul>



**Job Outlook:**

Entry-Level Careers within the Biomedical / Biotechnical field generally require 6 months of formal training, a current and valid license through the Department of Health to practice in Rhode Island, and additional certifications as needed.

**Biomedical Science Technician-** Career opportunities exist within various areas of focus (i.e. Cellular and Molecular Biology, Clinical Laboratory Science, Endoscopy, Equipment Maintenance, Pathology/Pathobiology, Bioinstrumentation, Biomaterials, Biomechanics, Pharmacy/Pharmacology, Biostatistics, Biology Sanitation, and Equipment Maintenance/Operation (within CT Scan, MRI, Radiology, Anesthesiology, Diagnostic Imaging, etc.)

**Laboratory Technician-** Career opportunities exist within various areas of focus (i.e. Biotechnology, Chemical Technician, Clinical Chemical Analysis, Biopharmaceuticals, Biological Technician, Biomanufacturing Associate, Hematology, Histology, Medical Device Testing, Microbiology, Pathology, Sterile Processing, Solution Preparation, etc. Technical Laboratory positions require a minimum of an Associate's Degree and demonstrated competence or experience in that field.

**Pay- What to Expect:**

Entry-Level Careers within the Biomedical / Biotechnical field (post - High School Diploma) generally start in the \$12-\$17/hour range.

**Instructor Certification Requirements:** Within a Biomedical Pathway, Instructors must be certified in Secondary Science.

**Environmental and Life Sciences Post-Secondary Options:**

Two-Year Programs	Four-Year College and University Programs
<p><b><u>Associates Degree programs include:</u></b></p> <p>(A.S.) Associate of Science Degree General Science, Biotechnology, Biology, Biological Sciences, Chemistry, Pharmacy, Physical Sciences, Radiology, etc.</p> <p>(A.A.S.) Associates Degree in Applied Science Applied Physics, Biology-Pre-Medicine, Chemical Technology, Molecular Biotechnology, Physical Sciences (Integrated Science)</p> <p><b><u>Sample Job Titles:</u></b></p> <p>Medical Lab Technician, Pharmacy Technician, Chemical Technician, Biomedical Technician, Laboratory Technician, Instrumentation Technician, Medical Technologist, Biopharmaceutical Technician, Clinical Data Analyst, Equipment Technician, Research Technician / Assistant, Water Quality Analyst, etc.</p>	<p><b><u>Bachelor of Science Degree disciplines include:</u></b></p> <p>(B.S.) Bachelor of Science Degree - Biological and Biomedical Sciences Biomedical Informatics, Biomedical Technology, Biological Science, Biotechnology, Biochemistry, Forensic Pathology, etc.</p> <p>(B.S.) Bachelor of Science Degree - Physical Sciences Mathematics and Physics, Chemistry, Physics, Forensic Chemistry, Statistics, Biochemistry, etc.</p> <p><b><u>Sample Job Titles:</u></b></p> <p>Biochemist, Bioinformatician, Biophysicist, Biotechnology Laboratory Technician, Biological Technician, Biomedical Engineer, Chemical Engineer, Clinical Research Associate, Forensic Science Technician, Microbiologist, Pharmacologist, Quality Control, Research Scientist, Environmental Health and Safety Officer, Genetic Therapist, etc.</p>

## Priority Sector: Environmental & Life Sciences

### Career Field: Plant Science – Landscaper & Groundskeeper

This standard prepares students: to graduate from high school prepared and ready to seek an entry-level position as a Landscape Professional, and to enter an Environmental and Life Sciences post-secondary program.

**Skills/knowledge needed in order to be prepared for entry-level work:** Upon successful completion of a RIDE Approved Environmental and Life Sciences Pathway, the candidate is expected to know and be able to:

Identify plants used in the industry

Identify and demonstrate safe use of tools

Explain plant life cycles

Demonstrate methods of plant cultivation

Identify landscape pests and determine management strategies

Explain basic ecological cycles (nutrients, soil, and water)

Possess professional workplace communication skills

**Expected industry credential (s) and/or certificate (s) granted upon successful completion of the pathway (if applicable):** High school students interested in becoming a Landscaper or Groundskeeper should enroll in a three or four year Environmental and Life Sciences curriculum, along with four years of Math, and three to four years of Science. Students enrolled in this pathway will take the National Occupational Competency Exam (NOCTI) in Horticulture-Landscaping or other field related NOCTI assessment. OSHA 10 Safe Workplace training is required.

*Requirements are summarized in the following table. Each column MUST be met to satisfy the requirements of the Rhode Island CTE Environmental and Life Sciences Standard.*

Academic Requirements		Safety Training		Mandatory Credential (s) Earned		Work-Based Experience (s) + Career Readiness Skills
Three - four consecutive years of Environmental & Life Sciences Coursework + Four years of Math + Three - four years of Science	+	OSHA 10 Safe Workplace  Recommended-Pesticide Safe Worker	+	National Occupational Competency Exam (NOCTI): Horticulture-Landscaping or Other Field Related NOCTI Assessment	+	Environment & Life Sciences work-based learning experience (s) and/or related mentoring program + Career Readiness Skills Component such as: • FFA LifeKnowledge • SkillsUSA Career Essential Suite

**Job Outlook:** Bright, according to RI LMI Occupational Projections. The employment of landscaping and groundskeepers is projected to grow 6 percent from 2014 to 2024. More workers will be needed to meet the increasing demand for lawn care and landscaping services from large institutions and individual homeowners. Job prospects should be very good (bls.gov).

**Opportunities:** Entry-level placement; licensed professional.

**Pay:** In Rhode Island, hourly median wages for Landscaping and Groundskeeping workers (\$13.72) are below the national mean (\$18.77). Median wages for the more skilled jobs such as tree trimmers (arborists) (\$20.75) and supervisors (\$23.09) are above average. With a four-year post-secondary degree, Landscape Architects' median wages (2016) are \$30.52 hourly and \$63,480 annually.

**Instructor Certification Requirements:** Secondary Grades Agriculture Certification from the Rhode Island Department of Education.

#### **Environmental and Life Sciences Post-Secondary Options**

<b><u>High School Degree Minimum</u></b>	<b><u>Two &amp; Four-Year College and University Programs</u></b>
<p><b><u>Sample Job Titles</u></b></p> <p>Retail /Wholesale Nursery- Field manager, Greenhouse manager, Sales manager</p> <p>Landscape/Garden construction</p> <p>Retail/Wholesale Florist</p> <p>Landscape Designer</p> <p>Landscape Maintenance/Contractor – Masonry and Hardscape, Landscape lighting, Irrigation, Machine maintenance, Crew supervisor</p>	<p><b><u>Bachelor of Science disciplines include (examples:</u></b></p> <p><b><u>Sample Job Titles</u></b></p> <p>Entomologist</p> <p>Agronomist</p> <p>Soil Scientist</p> <p>Soil Conservationist</p> <p>Landscape Architect</p> <p>Agricultural Educator</p>

## Priority Sector: Environmental & Life Sciences

### Career Field: Process Technician (Chemical Manufacturing, Research & Development)

This standard prepares students to graduate from high school prepared to enter an Environmental and Life Sciences program at the post-secondary level, and to be 'job ready' as a Process Technician.

**Processing Technicians** monitor the quality of products and processes at chemical and biological manufacturing facilities, as well as environmental, medical, and food service laboratories. Responsibilities may include: adjusting processing equipment to improve production efficiency and output; collecting samples from production batches, which then are tested for impurities and other defects; and testing product packaging to ensure that it is well designed, durable, and will have a limited impact on the environment. Process Technician positions are found in several industries including: pharmaceutical; environmental; food services/ manufacturing; plastics and chemical manufacturing; textile manufacturing; medical research and others.

The processing technician in manufacturing is involved in the execution of fully developed chemical processes to prepare marketed products; process robustness is expected and the technician is trained and qualified to execute the process. By contrast, process technician in an R&D facility (pilot plant) is involved in the execution of the process as they are developed; process variability is routine. Each new campaign is a process introduction. The R&D technician trains and is qualified on processing equipment, process troubleshooting, and unit operations independent of a specific process. In both cases, technicians may be required to operate under current good manufacturing/laboratory practices, or cGxP, and to have a working knowledge of environmental health and safety (EHS) guidelines.

In practice, a well-defined and documented employee-training program is essential to ensuring compliance with procedures and program expectations. An essential element of a good training program is the requirement for refresher training to ensure that the operating staff maintains a competent skill level and knowledge needed to be compliant with regulatory requirements.

**Skills/knowledge needed in order to be prepared for entry-level work:** Upon completion of a RIDE Approved Environmental and Life Sciences pathway, the candidate is expected to know and be able to:

- Monitor chemical processes;
- Set up/ use and maintain chemical processing equipment and associate software platforms that may control them;
- Troubleshoot production problems and/or malfunctioning instruments;
- Prepare chemical solutions;
- Conduct chemical/biological physical experiments related to research and development;
- Effectively use relevant technology/ instrumentation;
- Understand and follow Standard Operating Procedures (SOP);
- Practice Good Manufacturing Practices (GMP) and Good Lab Practices (GLP);
- Understand basic fluid mechanics and filtration;
- Work safely in a laboratory environment;
- Demonstrate analytical skills;
- Communicate effectively orally and in writing;
- Think critically;
- Interact with colleagues and team members appropriately;
- Observe and document processes;
- Effectively manage their time.

**Expected industry credential (s) and/or certificate (s) granted upon successful completion of the pathway (if applicable):**

High school students interested in becoming a process technician should enroll in a three or four year Environmental and Life Sciences curriculum, along with four years of math, to include basic applied math, and three years of science, including

Chemistry. For individuals working in this pathway in the manufacturing component both National Center for Construction Education Research (NCCER) HVAC & Plumbing (Levels 1 & 2) are credentials that support this pathway.

**Requirements are summarized in the following table. Each column MUST be met to satisfy the requirements of the Rhode Island CTE Environmental and Life Sciences Standard.**

Academic Requirements		Safety Training		Mandatory Credential (s) Earned		Work-Based Experience (s) + Career Readiness Skills
<b>Three / four consecutive years of Environmental &amp; Life Sciences Coursework</b> <b>+</b> <b>Three years of Science</b> , to include Chemistry. <b>+</b> <b>Four years of Math</b> to include Basic Applied Mathematics  <b>Recommended-</b> Mechanical, plumbing and HVAC or engineering coursework	+	OSHA 10	+	<b>One or more of the following:</b> <b>Project Lead the Way (PLTW)</b> Three Project Lead the Way Course Completion Certificate <b>College level courses in Field of Study:</b> Concurrent/Dual Enrollment with CCRI  <b>For individuals working in this pathway in the manufacturing component</b> , both National Center for Construction Education Research (NCCER) HVAC & Plumbing (Levels 1 & 2) are eligible to support this pathway.	+	<b>Science, mechanical, or engineering work-based learning experience (s) and/or related mentoring program</b> <b>+</b> <b>Career Readiness Skills Component</b> , such as: FFA LifeKnowledge SkillsUSA Career Essential Suite Naviance Junior Achievement

**Job Outlook:** As the instrumentation and techniques used in research, development, and production become more complex, employers will seek job candidates with highly developed technical skills. Job opportunities are expected to be best for graduates of applied science technology programs who are well trained in the latest technology and sophisticated equipment used in research and development or production facilities.

#### **Pay (Post-Secondary Program)**

SOC Code	Occupational Title	US	RI	CT	MA	Typical Education	Job Training
17-3025	Env. Eng. Technicians	\$23.64	\$18.17	\$24.09	\$21.96	AD	None
17-3026	Industrial Engineering Technicians	\$25.64	\$26.44	\$30.44	\$26.68	AD	None
17-3027	Mechanical Engineering Technicians	\$26.19	\$27.97	\$31.56	\$27.17	AD	None
19-4031	Chemical Technicians	\$22.04	\$21.33	\$23.12	\$25.91	AD	MT OJT
19-4091	Environmental Science and Protection Technicians, Incl. Health	\$21.25	\$22.82	\$18.94	\$26	HSD	MT OJT
29-2011	Med & Clinical Lab. Technologists	\$29.36	\$36.26	\$34.58	\$35	HSD	MT OJT
29-2012	Medical & Clinical Laboratory Technicians	\$18.73	\$27.63	\$21.38	\$19.48	HSD	LT OJT
29-2012	Med. and Clinical Lab. Technicians	\$18.73	\$27.63	\$21.38	\$19	BD	None

50-8031	Water & Wastewater Treatment Plant & System Operators	\$22.00	\$24.26	\$30.43	\$25.60	AD	None
51-6061	Textile Bleaching and Dyeing Machine Operators and Tenders	NA	NA	NA	\$14	AD	ST OJT
51-9011	Chem. Equip. Operators & Tenders	\$22.97	\$17.40	\$21.79	\$24.47	HSD	ST OJT
51-9023	Mixing & Blending Machine Setters, Operators, & Tenders	\$17.16	\$18.20	\$17.79	\$18.25	HSD	ST OJT
Average for all occupations (variations of Process Technician)		<u>\$22.52</u>	<u>\$24.37</u>	<u>\$25.05</u>	<u>\$24.51</u>		

**Instructor Certification Require:** an appropriately certified Secondary Science Instructor, while part of a Career and Technical Education Teacher pathway, can teach secondary Environmental & Life Sciences Process Technician. Applicants applying for these teaching certificates must meet RI certification requirements.

## Priority Sector: Graphic Communications Technology

### Career Field: Print Manufacturing-Pre-Production

#### Skills/knowledge needed to be prepared for entry-level work:

Upon completion of this high school Graphic Communications Technology training program, the candidate is expected to know and be able to:

#### Duties (may include, but not limited to):

Taking orders from customers. Troubleshooting problems. Determining prepress requirements by reviewing work orders. Reformatting inside pages based on clients' requirements. Creating and importing graphics; converting, scanning, and enhancing documents, illustrations, and photographs, into digital images. Maintaining quality results by editing layouts including spelling, grammar, punctuation, reproduction, clarity, and consistency; adhering to prepress standards. Obtaining layout approval by submitting completed design and layout; reviewing and implementing changes. Initiating printing production by transmitting files. Addressing management or customer concerns. Computer skills.

**Required Curriculum:** GAERF-PrintED, administered by the Graphic Arts Education and Research Foundation (GAERF®) is a national accreditation program, based on industry standards, appropriate for secondary and post-secondary schools offering graphic communications curricula. Adobe Visual Design forms the foundations of Design and Print Production is a yearlong, project-based curriculum that develops career and communication skills in graphic design, illustration and print and digital media production, using Adobe tools. Visual Design develops four key skill areas: Project management and collaboration, Design, Research and communication, Professional digital photography, illustration, and page layout using Adobe tools. PLTW Computer Science courses are part of the AP + PLTW computer science pathway. The program's interdisciplinary courses engage students in compelling, real-world challenges. As students work together to design solutions, they learn computational thinking – not just how to code – and become better thinkers and communicators.

**Expected industry credential(s) and /or certificate(s) granted upon successful completion of the program (if applicable):** Typically hold a certificate (GAERF-PrintED, Adobe, Skillconnect, NOCTI, AutoDesk, specialized proprietary software) or diploma in graphics operations (Xerox), design or printing technology. An alternative is an associate degree in graphic arts and imaging technology or printing and prepress technology.

#### Prerequisites for acquiring credential or certificate:

Study graphic communications, computers, commercial printing processes, math, lithography, and safety procedures.

#### Benefits of this level of achievement in the job market:

More job opportunities, an increased pay scale, job security, and increased subject matter expertise. High school and postsecondary CTE programs that lead to associate degrees, certificates, and industry-recognized credentials can help young people find skilled employment and give them the option of returning to school for a higher degree. CTE programs that earn industry certification receive high-quality curricula and professional development opportunities for their instructors. In addition, employers benefit from a more highly skilled workforce with certifiable skills. <http://www.nrccte.org/core-issues/industry-recognized-credentials> Descriptive analyses document the extent of general education CTE course taking by students with LD and their engagement in a concentrated program of occupationally specific general education CTE, a level of course taking early research has linked to improved post-high school employment outcomes. <http://ldx.sagepub.com/content/early/2015/03/16/0022219415574774.abstract>

**Job Outlook:** Employment of photographers is projected to grow 3 percent from 2014 to 2024, slower than the average for all occupations. Salaried jobs may be more difficult to find as more companies contract with freelancers rather than hire their own photographers. Prepress technicians face a challenging career outlook because the U.S. Bureau of Labor Statistics (BLS) expects to see a decline in jobs from 2014-2024, due in large part to technological developments that insert more automation into the printing process.

**Pay:** The most recent Rhode Island Labor Market Information for this profession identified as the production occupations dates from May 2015 and the entry-level wage is \$11-\$18/hr. Yearly wages are higher for entry-level wages due to overtime. The median annual pay rate \$34,080 + in 2015.

**Instructor Certification Requirements:** Secondary Graphic Communications Technology is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.



## Priority Sector: Graphic Communications Technology

### Career Field: Print Manufacturing-Production

#### Skills/knowledge needed to be prepared for entry-level work:

Upon completion of this high school Graphic Communications Technology training program, the candidate is expected to know and be able to:

#### Duties:

Taking orders from customers. Troubleshooting problems. Determining requirements by reviewing work orders. Reformatting inside pages based on clients' requirements. Operate various kinds of machinery making ground-level training on each piece of equipment important. Computer skills.

**Required Curriculum:** GAERF-PrintED, administered by the Graphic Arts Education and Research Foundation (GAERF®) is a national accreditation program, based on industry standards, appropriate for secondary and post-secondary schools offering graphic communications curricula. Adobe Visual Design forms the foundations of Design and Print Production is a yearlong, project-based curriculum that develops career and communication skills in graphic design, illustration and print and digital media production, using Adobe tools. Visual Design develops four key skill areas: Project management and collaboration, Design, Research and communication, Professional digital photography, illustration, and page layout using Adobe tools. PLTW Computer Science courses are part of the AP + PLTW computer science pathway. The program's interdisciplinary courses engage students in compelling, real-world challenges. As students work together to design solutions, they learn computational thinking – not just how to code – and become better thinkers and communicators.

**Expected industry credential(s) and /or certificate(s) granted upon successful completion of the program (if applicable):** Typically hold a certificate (GAERF-PrintED, Adobe, Skillconnect, NOCTI, AutoDesk, specialized proprietary software) or diploma in graphics operations (Xerox), design or printing technology. An alternative is an associate degree in graphic arts and imaging technology or printing and prepress technology.

#### Prerequisites for acquiring credential or certificate:

Study graphic communications, computers, commercial printing processes, math, lithography, and safety procedures.

#### Benefits of this level of achievement in the job market:

More job opportunities, an increased pay scale, job security, and increased subject matter expertise. High school and postsecondary CTE programs that lead to associate degrees, certificates, and industry-recognized credentials can help young people find skilled employment and give them the option of returning to school for a higher degree. CTE programs that earn industry certification receive high-quality curricula and professional development opportunities for their instructors. In addition, employers benefit from a more highly skilled workforce with certifiable skills. <http://www.nrccte.org/core-issues/industry-recognized-credentials> Descriptive analyses document the extent of general education CTE course taking by students with LD and their engagement in a concentrated program of occupationally specific general education CTE, a level of course taking early research has linked to improved post-high school employment outcomes. <http://ldx.sagepub.com/>

**Bureau of Labor Statistics:** Job Outlook - Employment of print binding and finishing workers is projected to decline 4 percent from 2012 to 2022.

**Pay:** The most recent Rhode Island Labor Market Information for this profession identified as the production occupations dates from May 2015 and the entry-level wage is \$13/hr. for bindery and finishing and \$14/hr. for

press. Yearly wages are higher for entry-level wages due to overtime. The median annual pay rate \$34,080 + in 2015.

**Instructor Certification Requirements:** Secondary Graphic Communications Technology is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

## Priority Sector: Graphic Communications Technology

### Career Field: Design & Web-Print ECommerce

#### Skills/knowledge needed to be prepared for entry-level work:

Upon completion of this high school Graphic Communications Technology training program, the candidate is expected to know and be able to:

#### Duties:

Cultivate a solid body of work. Take the design “brief” to record requirements and client’s needs. Schedule project implementation and define budget constraints. Work with a wide range of media and use graphic design software. Think creatively and develop new design concepts, graphics and layouts. Prepare rough drafts and present your ideas. Amend final designs to clients’ comments and gain full approval. Work as part of a team with copywriters, designers, stylists, executives etc.

**Required Curriculum:** PrintED, administered by the Graphic Arts Education and Research Foundation (GAERF®) is a national accreditation program, based on industry standards, appropriate for secondary and postsecondary schools offering graphic communications curricula. Adobe Visual Design forms the foundations of Design and Print Production is a yearlong, project-based curriculum that develops career and communication skills in graphic design, illustration and print and digital media production, using Adobe tools. Visual Design develops four key skill areas: Project management and collaboration, Design, Research and communication, Professional digital photography, illustration, and page layout using Adobe tools. PLTW Computer Science courses are part of the AP + PLTW computer science pathway. The program’s interdisciplinary courses engage students in compelling, real-world challenges. As students work together to design solutions, they learn computational thinking – not just how to code – and become better thinkers and communicators.

**Expected industry credential(s) and /or certificate(s) granted upon successful completion of the program (if applicable):** Typically hold a certificate (GAERF-PrintED, Adobe, Skillconnect, NOCTI, AutoDesk, specialized proprietary software) or diploma in graphics operations (Xerox), design or printing technology. An alternative is an associate degree in graphic arts and imaging technology or printing and prepress technology.

#### Prerequisites for acquiring credential or certificate:

Study graphic communications technology and or Adobe software, computers, commercial printing processes, math, lithography, and safety procedures.

#### Benefits of this level of achievement in the job market:

More job opportunities, an increased pay scale, job security, and increased subject matter expertise. High school and postsecondary CTE programs that lead to associate degrees, certificates, and industry-recognized credentials can help young people find skilled employment and give them the option of returning to school for a higher degree. CTE programs that earn industry certification receive high-quality curricula and professional development opportunities for their instructors. And employers benefit from a more highly skilled workforce. Descriptive analyses document the extent of general education CTE course taking by students with LD and their engagement in a concentrated program of occupationally specific general education CTE, a level of course taking early research has linked to improved post-high school employment outcomes. <http://ldx.sagepub.com/content/early/2015/03/16/0022219415574774.abstract>

#### Bureau of Labor Statistics: Job Outlook:

The Bureau of Labor Statistics expects the employment of graphic designers to grow as much as 13 percent annually, due to the increased emphasis on online advertising and technology firms. Furthermore, with the expansion of mobile Internet and increased adoption of broadband Internet, employers are looking every day for

innovative web designers who are able to take advantage of these technological advances. <http://www.collegesanddegrees.com/programs/web-design/job-profile>

**Pay:** The most recent Rhode Island Labor Market Information for this profession identified as the Graphic Designers Design & Web-Print ECommerce dates from May 2015 and the entry-level wage is \$19/hr. The median annual pay rate \$52,000 + in 2015.

**Instructor Certification Requirements:** Secondary Graphic Communications Technology is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

## Priority Sector: Graphic Communications Technology

### Career Field: Audio/Video

#### Skills/knowledge needed to be prepared for entry-level work:

Upon completion of this high school Graphic Communications Technology training program, the candidate is expected to know and be able to:

#### Duties:

Set up and install equipment such as microphones, sound speakers, video screens, projectors, video monitors, recording equipment, connecting wires and cables, sound and mixing boards for events and functions such as concerts, sports events, meetings and conventions, presentations, and news conferences. Set up and operate audio/video equipment. Test and resolve equipment issues. Diagnose and correct media system problems. Mix sound inputs and feeds. Exceptional computer troubleshooting. Be familiar with Adobe type software programs, such as Dreamweaver, Flash, and InDesign. Maintain inventory of equipment.

**Required Curriculum:** PrintED, administered by the Graphic Arts Education and Research Foundation (GAERF®) is a national accreditation program, based on industry standards, appropriate for secondary and postsecondary schools offering graphic communications curricula. Adobe Visual Design forms the foundations of Design and Print Production is a yearlong, project-based curriculum that develops career and communication skills in graphic design, illustration and print and digital media production, using Adobe tools. Visual Design develops four key skill areas: Project management and collaboration, Design, Research and communication, Professional digital photography, illustration, and page layout using Adobe tools. PLTW Computer Science courses are part of the AP + PLTW computer science pathway. The program's interdisciplinary courses engage students in compelling, real-world challenges. As students work together to design solutions, they learn computational thinking – not just how to code – and become better thinkers and communicators.

**Expected industry credential(s) and /or certificate(s) granted upon successful completion of the program (if applicable):** Typically hold a certificate (GAERF-PrintED, Adobe, Skillconnect, NOCTI, Autodesk specialized proprietary software) or diploma in electronic prepress operations (Xerox) or printing prepress technology. An alternative is an associate degree in graphic arts and imaging technology or printing technology and college credit.

#### Prerequisites for acquiring credential or certificate:

Study graphic communications technology and or Adobe software, computers, math, lithography, and safety procedures.

#### Benefits of this level of achievement in the job market:

More job opportunities, an increased pay scale, job security, and increased subject matter expertise. High school and postsecondary CTE programs that lead to associate degrees, certificates, and industry-recognized credentials can help young people find skilled employment and give them the option of returning to school for a higher degree. CTE programs that earn industry certification receive high-quality curricula and professional development opportunities for their instructors. And employers benefit from a more highly skilled workforce with certifiable skills. <http://www.nrccte.org/core-issues/industry-recognized-credentials> Descriptive analyses document the extent of general education CTE course taking by students with LD and their engagement in a concentrated program of occupationally specific general education CTE, a level of course taking early research has linked to improved post-high school employment outcomes. <http://idx.sagepub.com/content/early/2015/03/16/0022219415574774.abstract>

#### Bureau of Labor Statistics (BLS): Job Outlook:

RIDE – October 23, 2017

The BLS projected that employment in the sector would grow by about six percent from 2012-2022.

**Pay:** The most recent Rhode Island Labor Market Information for this profession identified as the Audio/Video technician's dates from May 2015 and the entry-level wage is \$17/hr. The median annual pay rate \$35,500 + in 2015.

**Instructor Certification Requirements:** Secondary Graphic Communications Technology is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

## Priority Sector: Graphic Communications Technology

### Career Field: Advertising/Marketing

#### Skills/knowledge needed to be prepared for entry-level work:

Upon completion of this high school Graphic Communications Technology training program, the candidate is expected to know and be able to:

#### Duties

Initiate and oversee multiple product promotions for several key e-commerce channels across a variety of platforms, social media outlets and mailing lists to drive revenue and social proof. Research current ecommerce offerings, understand opportunities and constraints and develop recommendations based on unique business needs. Use data management to track and forecast sales data, as well as logging the statuses and success rates of promotional offerings. Correspond with customers and/or promotional participants resolve any new or outstanding discrepancies, as well as answering any general inquiries pertaining to past, present or future promotions. Coordinate with management and operations departments regarding quantity and timing of promotional initiatives. Additional day-to-day tasks may include: Creating copy for promotional emails, proactively researching new promotional outlets, creating accurate promotional discount codes across multiple storefronts, and coordinating with leadership to ensure revenue-building results.

**Required Curriculum:** PrintED, administered by the Graphic Arts Education and Research Foundation (GAERF®) is a national accreditation program, based on industry standards, appropriate for secondary and postsecondary schools offering graphic communications curricula. Adobe Visual Design forms the foundations of Design and Print Production is a yearlong, project-based curriculum that develops career and communication skills in graphic design, illustration and print and digital media production, using Adobe tools. Visual Design develops four key skill areas: Project management and collaboration, Design, Research and communication, Professional digital photography, illustration, and page layout using Adobe tools. PLTW Computer Science courses are part of the AP + PLTW computer science pathway. The program's interdisciplinary courses engage students in compelling, real-world challenges. As students work together to design solutions, they learn computational thinking – not just how to code – and become better thinkers and communicators.

**Expected industry credential(s) and /or certificate(s) granted upon successful completion of the program (if applicable):** Typically hold a certificate (GAERF-PrintED, Adobe, Skillconnect, NOCTI, Autodesk, specialized proprietary software) or diploma in electronic prepress operations (Xerox) or printing prepress technology. An alternative is an associate degree in graphic arts and imaging technology or printing technology.

**Prerequisites for acquiring credential or certificate:** Study graphic communications, computers, commercial printing processes, math, lithography, and safety procedures.

**Benefits of this level of achievement in the job market:** More job opportunities, an increased pay scale, job security, and increased subject matter expertise. High school and postsecondary CTE programs that lead to associate degrees, certificates, and industry-recognized credentials can help young people find skilled employment and give them the option of returning to school for a higher degree. CTE programs that earn industry certification receive high-quality curricula and professional development opportunities for their instructors. In addition, employers benefit from a more highly skilled workforce with certifiable skills. <http://www.nrccte.org/core-issues/industry-recognized-credentials> Descriptive analyses document the extent of general education CTE course taking by students with LD and their engagement in a concentrated program of occupationally specific general education CTE, a level of course taking early research has linked to improved post-high school employment outcomes. <http://ldx.sagepub.com/content/early/2015/03/16/0022219415574774.abstract>  
RIDE – October 23, 2017

**Bureau of Labor Statistics: Job Outlook:** Employment of advertising, promotions, and marketing managers is projected to grow 9 percent from 2014 to 2024.

**Pay:** The most recent Rhode Island Labor Market Information for this profession identified as the Advertising/Marketing from May 2015 and the entry-level wage is \$13/hr. for an intern on Indeed.com. The median annual pay rate \$56,500 + in 2015.

**Instructor Certification Requirements:** Secondary Graphic Communications Technology is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.



## Priority Sector: Graphic Communications Technology

### Career Field: Sales/Support staff

#### Skills/knowledge needed to be prepared for entry-level work:

Upon completion of this high school Graphic Communications Technology training program, the candidate is expected to know and be able to:

#### Duties

Processing new sales leads. Managing the correspondence between the sales team and their client. Monitoring customer accounts. Providing data and reports to help the sales team. Keeping track of sales targets. Answering phone calls. Scheduling diaries.

**Required Curriculum:** PrintED, administered by the Graphic Arts Education and Research Foundation (GAERF®) is a national accreditation program, based on industry standards, appropriate for secondary and postsecondary schools offering graphic communications curricula. Adobe Visual Design forms the foundations of Design and Print Production is a yearlong, project-based curriculum that develops career and communication skills in graphic design, illustration and print and digital media production, using Adobe tools. Visual Design develops four key skill areas: Project management and collaboration, Design, Research and communication, Professional digital photography, illustration, and page layout using Adobe tools. PLTW Computer Science courses are part of the AP + PLTW computer science pathway. The program's interdisciplinary courses engage students in compelling, real-world challenges. As students work together to design solutions, they learn computational thinking – not just how to code – and become better thinkers and communicators.

**Expected industry credential(s) and /or certificate(s) granted upon successful completion of the program (if applicable):** Typically hold a certificate (GAERF-PrintED, Adobe, Skillconnect, NOCTI, Autodesk, specialized proprietary software) or diploma in electronic prepress operations (Xerox) or printing prepress technology. An alternative is an associate degree in graphic arts and imaging technology or printing technology, college credits.

**Prerequisites for acquiring credential or certificate:** Study graphic communications, computers, commercial printing processes, math, lithography, and safety procedures.

**Benefits of this level of achievement in the job market:** More job opportunities, an increased pay scale, job security, and increased subject matter expertise. High school and postsecondary CTE programs that lead to associate degrees, certificates, and industry-recognized credentials can help young people find skilled employment and give them the option of later returning to school for a higher degree. CTE programs that earn industry certification receive high-quality curricula and professional development opportunities for their instructors. And employers benefit from a more highly skilled workforce with certifiable skills. <http://www.nrccte.org/core-issues/industry-recognized-credentials> Descriptive analyses document the extent of general education CTE course taking by students with LD and their engagement in a concentrated program of occupationally specific general education CTE, a level of course taking early research has linked to improved post-high school employment outcomes. <http://idx.sagepub.com/content/early/2015/03/16/0022219415574774.abstract>

**Bureau of Labor Statistics: Job Outlook:** Employment of wholesale and manufacturing sales representatives is projected to grow 7 percent from 2014 to 2024.

**Pay:** The most recent Rhode Island Labor Market Information for this profession identified as the Sales/Support staff from May 2015 and the entry-level wage is \$13/hr. The median annual pay rate \$29,000–\$59,000 in 2015.

**Instructor Certification Requirements:** Secondary Graphic Communications Technology is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

## Priority Sector: Health Careers/ Medical Pathways

### Career Field: Certified Nursing Assistant (CNA)

**Skills/ knowledge needed to be prepared for entry-level work:** Upon completion of this high school Nursing Assistant training program, the candidate is expected to know and be able to:

1. Assist patients/residents with Activities of Daily Living (ADLs) including personal hygiene, dressing and grooming, nutrition and hydrations, elimination, rest/sleep/comfort;
2. Perform basic nursing skills including, following infection control and safety/emergency procedures/practices, therapeutic/technical procedures, data collection and reporting;
3. Assist patients/residents with restorative care skills;
4. Assist patients/residents with emotional and Mental Health needs;
5. Communicate with medical personal and patients;
6. Abide by client's rights, legal and ethical behaviors;
7. Be an active member of the healthcare team;
8. Provide care that meets spiritual and cultural needs.

**Required Curriculum:** District decision

**Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):** Rhode Island Certified Nursing Assistant (CNA) license secured by successfully passing a written exam/skills evaluation with an associated cost of \$99.00.

**Prerequisites for acquiring credential or certificate:** Candidate must complete a Rhode Island Department of Health-approved nursing assistant training program\*.

*The required minimum of total hours for the Certified Nursing Assistant Training Program is one hundred (100). No less than twenty (20) hours of practical training integrated (off site in accredited long-term care facility). At least sixteen (16) hours of classroom instruction shall be required prior to a trainee's direct involvement in patient care.*

**Benefits of this level of achievement in job market:** Many CNAs use their knowledge and training as a stepping-stone toward becoming a medication aide, Licensed Practical Nurse, Registered Nurse, or enrolled in a pre-medicine program. The R.I. Department of Health and National Nurse Aide Assessment Program (NNAAP) certification provides a foundation for future training, and it can lead to additional employment opportunities in the health care field. Frequently candidates complete an accredited medication course and become medication aides/CNAs in long-term care facilities.

**Job Outlook** - Employment of nursing assistants and orderlies is projected to grow 17 percent from 2014 to 2024, much faster than the average for all occupations. Because of the growing elderly population, many nursing assistants and orderlies will be needed to assist and care for these patients.

**Pay** – The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for nursing assistants and orderlies at that time was \$25,022.00 (\$12.03 per hour).

**Instructor Certification Requirements:** Secondary Health Careers/Medical Pathways/Certified Nursing Assistant is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

\*A student is allowed one (1) year from the date you began your nursing assistant training program to pass the nursing assistant examination. If you do not pass the NNAAP Examination within the 1-year training period or have failed the examinations three (3) times, candidate is required to re-train in program.

## Priority Sector: Health Careers/ Medical Pathways

### Career Field: Certified Patient Care Technician (CPCT) *provisional license*

**Skills/ knowledge needed to be prepared for entry-level work:** Upon completion of this high school Patient Care Technician program, the candidate is expected to know and be able to:

1. Respond to patient calls and requests;
2. Assist patients with personal hygiene tasks;
3. Tidy patients' rooms;
4. Serve meals and feed patients;
5. Monitor vital signs.
6. Draw laboratory specimens;
7. Perform EKGs and other clinical tasks;
8. Set up equipment;
9. Assist the physician or nurse with therapies.

**Required Curriculum:** District decision

**Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):**

Certified Patient Care Technician (Through the National Health Career Association NHA). *This is a PROVISIONAL license.*

*Students have 12 months to graduate High School and preform a minimum of thirty (30) venipunctures, ten (10) capillary sticks, and ten (10) Electrocardiograms (EKG) on live individuals. Students will then gain full certification.*

**Prerequisites for acquiring credential or certificate:** Candidate must:

- Obtain certification in CPR, AED, First Aid Certified (preferred through American Heart
  - Association: Basic Life Support (BLS) for Health Care Providers (HCP);
- Complete full accredited Nursing Assistant Training Program & obtain R.I. State CNA Licensure
  - Some states require CNA licensing prior to becoming certified as a Patient Care Technician \*;
- Complete a full Patient Care Technician accredited program and successfully take the related exam (online/written) with an associated fee of \$149.00.

**Benefits of this level of achievement in job market:** Many CPCTs use their knowledge and training as a stepping-stone toward becoming a LPN or RN. The NHA's CPCT certification provides a foundation for future training, and it can lead to additional employment opportunities in the health care field (Example: CNA Level II at R.I. Hospital). This credential is authorized by the NHA and is nationally recognized.

**Job Outlook** - Employment of nursing assistants and orderlies is projected to grow 17 percent from 2014 to 2024, much faster than the average for all occupations. Because of the growing elderly population, many nursing assistants and orderlies will be needed to assist and care for these patients.

**Pay** – The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for nursing assistants and orderlies at that time was \$25,022.00 (\$12.03 per hour).

**Instructor Certification Requirements** - Secondary Health Careers/Medical Pathways/ Certified Patient Care Technician is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

\* The required minimum of total hours for the Patient Care Technician is 300. The number of hours for each topic is recommended and can be adjusted to suit the needs of the specific program.

## Priority Sector: Health Careers/ Medical Pathways

### Career Field: Community Health Worker

**Skills/knowledge needed to be prepared for entry-level work plus related administrative duties that may include but are not limited to:**

1. Identify and document needs and health topics relevant to the priority population;
2. Adapt outreach strategies based on population, venue, behavior or identified risks that are appropriate to a given population and its self-determined concerns;
3. Identify basic geographic and structural features that define, support and inhibit outreach in the community;
4. Engage clients in ways that establish trust and rapport with them and their families;
5. Create a non-judgmental atmosphere in interactions with clients and their families;
6. Identify personal safety issues and possible responses to potentially dangerous situations;
7. Document and help create networks and establish partnerships and linkages with other community health workers and organizations for the purpose of care coordination and enhancing resources.

**Required Curriculum:** District decision

**Core Competency:** Outreach Methods and Strategies

1. Individual and Community Assessment
2. Effective Communication
3. Cultural Responsiveness and Mediation
4. Education to Promote Healthy Behavior Change
5. Care Coordination and System Navigation
6. Use of Public Health Concepts and Approaches
7. Advocacy and Community Capacity Building
8. Documentation
9. Professional Skills and Conduct

**Clinical Duties** (may include, but not limited to):

- Helping individuals, families, groups and communities develop their capacity and access to resources, including health insurance, food, housing, quality care and health information;
- Facilitating communication and client empowerment in interactions with health care/social service systems;
- Helping health care and social service systems become culturally relevant and responsive to their service population;
- Helping people understand their health condition(s) and develop strategies to improve their health and well-being;
- Helping to build understanding and social capital to support healthier behaviors and lifestyle choices;
- Delivering health information using culturally appropriate terms and concepts;
- Linking people to health care/social service resources;
- Providing informal counseling, support and follow-up;
- Advocating for local health needs;
- Providing health services, such as monitoring blood pressure and providing first aid;
- Making home visits to chronically ill patients, pregnant women and nursing mothers, individuals at high risk of health problems and the elderly;
- Translating and interpreting for clients and health care/social service providers.

**Expected industry credential(s) and /or certificate(s) granted upon successful completion of the program (if applicable):** At this time there is voluntary certification. Eventually this position has potential to become a certified position to work with health care providers. The certification programs usually last 18 months and may require additional postsecondary training.

**Benefits of this level of achievement in the job market:**

Throughout the United States, the community health worker field is growing, both in interest and demand, yet the practice lacks definition, standards and openly available training opportunities. The field is also rapidly expanding into new areas of health and community wellness.

**Job Outlook** - Employment of health educators and community health workers is projected to grow 13 percent from 2014 to 2024, faster than the average for all occupations. Growth will be driven by efforts to improve health outcomes and to reduce healthcare costs by teaching people healthy habits and behaviors and explaining how to use available healthcare services.

**Pay** – The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for Community Health Workers at that time was \$35,277.00 (\$16.96 per hour).

**Instructor Certification Requirements** - Secondary Health Careers/Community Health Worker is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

## Priority Sector: Health Careers/ Medical Pathways

### Career Field: Dental Hygienist

**Skills/knowledge needed to be prepared for entry-level work: Administrative Duties** (may include, but not limited to): Dental hygienists need to be adept at using both hand and power tools to remove tartar, stains and plaque from teeth and to apply sealants, polishes and fluoride treatments. This requires a certain level of hand-eye coordination to manipulate the instruments properly. It also requires a steady hand. In addition, hygienists must be familiar with the proper use of X-ray equipment to evaluate tooth or jaw problems.

Medicine and Dentistry — Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures. See more occupations related to this knowledge.

Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction. See more occupations related to this knowledge.

#### Required Curriculum:

**Clinical Duties** (may include, but not limited to):

- Clean calcareous deposits, accretions, and stains from teeth and beneath margins of gums, using dental instruments. See more occupations related to this task;
- Record and review patient medical histories. See more occupations related to this task;
- Examine gums, using probes, to locate periodontal recessed gums and signs of gum disease. See more occupations related to this task;
- Feel and visually examine gums for sores and signs of disease. See more occupations related to this task;
- Expose and develop x-ray film.

**Expected industry credential(s) and /or certificate(s) granted upon successful completion of the program (if applicable):** Dental Hygiene License

#### Prerequisites for acquiring credential or certificate

Licensure is granted by each individual state. Dental hygienists practice in accordance with requirements of individual state dental practice acts.

In virtually every state, several steps are required before a license can be granted:

- Graduation from an accredited dental hygiene program;
- Successful completion of the written National Board Dental Hygiene Examination;
- Successful completion of a regional or state clinical board examination.

Once these steps have been completed, an applicant for licensure must then contact the state licensing authority in the state where he/she wishes to practice. As licensing requirements vary from state to state, it is necessary to contact each licensing authority in a given state for its specific application requirements and procedures.

Requirements for a dental hygienist license in Rhode Island include transcripts from an accredited institution (Associates @ CCRI) that proves the applicant has earned a degree in dental hygiene, a birth certificate, a passport-sized photograph, and passing scores in the National Board and regional board exams.

**Benefits of this level of achievement in the job market:** Employment of dental hygienists is projected to grow 33 percent from 2012 to 2022, much faster than the average for all occupations. Ongoing research linking oral



health to general health will continue to spur demand for preventative dental services, which are often provided by dental hygienists.

**Job Outlook** - Employment of dental hygienists is projected to grow 19 percent from 2014 to 2024, much faster than the average for all occupations. Ongoing research linking oral health to general health will continue to spur demand for preventive dental services, which are provided by dental hygienists.

**Pay** – The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for Dental Hygienists at that time was \$73,902.00 (\$32.53 per hour).

**Instructor Certification Requirements** - Secondary Health Careers/Dental Hygienist is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

## Priority Sector: Health Careers/ Medical Pathways

### Career Field: Emergency Medical Responder

#### Skills/ knowledge needed to be prepared for entry-level work:

1. Use knowledge of the EMS system, safety/well-being of the EMR, and medical/legal issues at the scene of an emergency while awaiting a higher level of care;
2. Have awareness of local public health resources and the role of EMR personnel in public health emergencies;
3. Use simple medical and anatomical terms;
4. Use simple knowledge of the anatomy and function of the upper airway, heart, vessel, blood, lungs, skin, muscles and bones the foundation of emergency care;
5. Use simple knowledge of age-related differences to assess and care for patients;
6. Apply knowledge (fundamental depth, foundational breadth) of general anatomy and physiology to assure patent airway, adequate mechanical ventilation and respiration while awaiting additional EMS response for patients of all ages;
7. Use simple knowledge of shock and respiratory compromise to respond to life threats;
8. Use assessment information to recognize shock, respiratory failure or arrest, and cardiac arrest based on assessment findings, and manage the emergency while awaiting additional emergency response;
9. Conduct Patient assessment;
10. Conduct primary assessment;
11. Take history and vital signs;
12. Use scene information and simple patient assessment findings to identify and manage immediate life threats and injuries within the scope of practice of the EMR;
13. Practice principles of communicating with patients in a manner that achieves a positive relationship;
14. Recognize and manage life threats based on assessment findings of a patient with a medical emergency while awaiting additional emergency response;
15. Identify and categorize trauma patients and activate the appropriate trauma system approach;
16. Use knowledge of EMR systems to recognize and manage life threats related to trauma/shock, resuscitation, and trauma such as bleeding and shock, chest and abdominal emergencies, soft tissue injuries, injuries to head and spine, musculoskeletal injuries, and environmental emergencies;
17. Recognize and manage life threats based on assessment findings for a patient with special needs such as obstetrics and neonatal care, pediatric emergencies, geriatric patients, and patients with special challenges and situations while awaiting additional emergency response;
18. Use knowledge of operational roles and responsibilities to ensure patient, public, and personal safety.

#### Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):

1. First Aid;
2. CPR/AED;
3. Certificate of Completion (meeting all standards).

**Prerequisites for acquiring credential or certificate:** The students, who wish to become a skilled EMT in Rhode Island, have to go through an EMT training program and may have to provide a Bureau of Criminal Identification (BCI) report. Students must be 18 years old with a high school diploma.

**Benefits of this level of achievement in job market:** This course is a preparatory course to the EMT course and instructs students in basic knowledge, application, and skills of an emergency medical responder. Students who successfully complete this course would be able to volunteer as a medical responder and/or gain employment where CPR, First Aid, and/or AED certificates are required.

**Job Outlook** - Employment of emergency medical technicians (EMTs) and paramedics is projected to grow 24 percent from 2014 to 2024, much faster than the average for all occupations. Emergencies, such as car crashes, natural disasters, and acts of violence, will continue to create demand for EMTs and paramedics.

**Pay** – The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for Emergency Medical Responder at that time was \$28,662.00 (\$13.78 per hour).

**Instructor Certification Requirements** - Secondary Health Careers/Emergency Medical Responder is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

## Priority Sector: Hospitality

### Career Field: Culinary – Line Cook

#### Skills/Knowledge needed to be prepared for entry-level work:

- Knife Skills
- Customer Service
- Food Safety Management
  - Proper food storage and handling techniques
  - Clean food preparation areas, facilities or equipment
- Cost Control
- Culinary Techniques
- Purchasing and inventory
- Marketing and the menu
  - Knowledge of raw materials
  - Techniques for maximizing the effective manufacture and distribution of goods
  - Planning menu options
- Accountability
- Dependability and presentation
- Communication Skills
- Use of computers, POS systems, cash registers
- Teamwork Skills

#### Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- American Culinary Federation (ACF) accreditation for culinary education (ACF)
- ProStart National Certificate of Achievement (COA)
- ServSafe Food Safety Manager Certification
- ServSafe Allergen Training Certification

**Prerequisites for acquiring a ProStart COA credential or certificate:** Successful completion of Year One and Year Two Exams. Students must obtain a paid or un-paid internship and complete 400 hours of work experience and demonstrate proficiency on more than 50 workplace competencies.

**Prerequisite for acquiring a ServSafe Food Safety Manager Certification and ServSafe Allergen Training: State of RI Requirements;** Successful completion of 15 hours of classroom training. Students must receive a 75% or higher on the exam to become certified. Once the student is certified, they must register with the state of Rhode Island Department of Health. This certification is valid for 3 years, statewide. Every 3 years, the student must re-certify by taking a 6-hour refresher course and then resubmit with the DOH. If the student would like to maintain their national certification, the student must take the course and exam every 5 years. The state of RI recognizes the allergen training covered in the ServSafe Food Safety Manager Training as being certified. Other states, however, require a separate online Allergen Training.

**Benefits of this level of achievement in job market:** The ProStart Program was developed by The National Restaurant Association to meet industry needs. It is offered in all 50 states and U.S. Military bases around the world. ProStart Certification prepares graduates with the necessary skills to attain entry-level employment in the RIDE – October 23, 2017

foodservice/culinary industry. Also, the postsecondary benefit is that top post-secondary schools in the nation recognize the ProStart COA and award students with college credits, advanced placement and/or credit for work experience.

**Job Outlook\*** - Overall employment of cooks is projected to grow 4 percent from 2014 to 2024, slower than the average for all occupations. Job opportunities will result from the combination of employment growth and the need to replace workers who leave the occupation.

**Pay\*\*** – The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for Line Cook at that time was \$20,821.00 (\$10.01 per hour).

**Instructor Certification Requirements:** Secondary Hospitality/Culinary is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

**Sources:**

National Restaurant Association, [www.onetonline.org](http://www.onetonline.org)

\* US Department of Labor; Bureau of Labor Statistics; *Occupational Outlook Handbook*

\*\* RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics

## Priority Sector: Hospitality

### Career Field: Restaurant Operations - Server

#### Skills/Knowledge needed to be prepared for entry-level work:

- Customer and Personal Service
  - Assessing customer needs
  - Meeting quality standards for services
  - Evaluating customer satisfaction
- Food Safety Management
  - Proper food handling techniques
- Cost Control
- Marketing
- Accountability
- Dependability and presentation
- Communication Skills
  - Active Listening
  - Service Orientation
  - Social Perceptiveness
- Use of computers, POS systems, cash registers
- Teamwork Skills

#### Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- American Culinary Federation (ACF) accreditation for culinary education (ACF)
- ProStart National Certificate of Achievement (COA)
- ServSafe Food Safety Manager Certification
- ServSafe Allergen Training Certification
- ServSafe Alcohol Training & Certification

**Prerequisites for acquiring ProStart COA credential or certificate:** Successful completion of Year One and Year Two Exams. Students must obtain a paid or un-paid internship and complete 400 hours of work experience and demonstrate proficiency on more than 50 workplace competencies.

**Prerequisite for acquiring a ServSafe Food Safety Manager Certification and ServSafe Allergen Training: State of RI Requirements;** Successful completion of 15 hours of classroom training. Students must receive a 75% or higher on the exam to become certified. Once the student is certified, they must register with the state of Rhode Island Department of Health. This certification is valid for 3 years, statewide. Every 3 years, the student must re-certify by taking a 6-hour refresher course and then resubmit with the DOH. If the student would like to maintain their national certification, the student must take the course and exam every 5 years. The state of RI recognizes the allergen training covered in the ServSafe Food Safety Manager Training as being certified. Other states, however, require a separate online Allergen Training.

**Prerequisite for acquiring a ServSafe Alcohol Training and Certification:** Successful completion of 2-hour training in ServSafe Alcohol Training. Students must obtain a 75% on the exam to obtain their certification. Any person in the state of RI who sells or serves alcoholic beverages, valet workers, and supervisors overseeing such

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persons, shall be certified in Alcohol Training within 60 days of beginning their employment. Certifications must be renewed every 3 years.

**Benefits of this level of achievement in job market:** The ProStart Program was developed by The National Restaurant Association to meet industry needs. It is offered in all 50 states and U.S. Military bases around the world. ProStart Certification prepares graduates with the necessary skills to attain entry-level employment in the foodservice/culinary industry. Also, the postsecondary benefit is that top post-secondary schools in the nation recognize the ProStart COA and award students with college credits, advanced placement and/or credit for work experience.

**Instructor Certification Require:** Secondary Hospitality /Restaurant Operations is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

**Sources:** National Restaurant Association, [www.onetonline.org](http://www.onetonline.org)

## Priority Sector: Hospitality

### Career Field: Hotel Operations – Hotel Phone Operator

#### Skills/Knowledge needed to be prepared for entry-level work:

- Customer and Personal Service
  - Assessing customer needs
  - Meeting quality standards for service
  - Active Listening
- Operating Property Management Systems
- Problem resolution skills
- Sales and Marketing Skills
  - Knowledge of principles and methods for showing, promoting and selling products and services
  - Sales techniques and control systems
- Effective Communication Skills
  - Oral Expression
  - Speech Clarity
  - Persuasion
- Multi-Tasking Skills
- Administration and Management
  - Strategic Planning, resource allocation, and coordination of people and resources
- Proper Appearance
- Accountability and Reliability
- Teamwork
  - The ability to work with various departments throughout the property

#### Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- Certified Hospitality & Tourism Management Professional Certification (CHTMP)
- Certified Guest Service Professional (CGSP)

**Prerequisites for acquiring credential or certificate:** Successful completion of both HTMP Year 1 and HTMP Year 2 final exams. Students must complete 100 hours of work experience in a qualifying position within the hospitality industry, paid or unpaid.

**Prerequisites for acquiring Guest Service Professional credential:** Students must complete a three-hour online training. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

**Benefits of this level of achievement in job market:** The HTMP program was developed by the American Hotel Lodging Association based upon industry needs. CHTMP certification prepares graduates with the necessary skills to attain entry-level employment in the hospitality industry. Also, the postsecondary benefit is that the learning objectives can be compared to hospitality management courses at four-year and two-year post-secondary schools. Upon successful completion of both year-end exams, the student will be able to articulate into a school



that teaches Education Institute courses or uses Educational Institute textbooks. This encompasses over 1,500 schools around the world.

**Instructor Certification Require:** Secondary Hospitality / Hotel Operations is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

**Sources:** National Restaurant Association, [www.onetonline.org](http://www.onetonline.org)

## Priority Sector: Hospitality

### Career Field: Tourism - Amusement and Recreation Attendant

#### Skills/Knowledge needed to be prepared for entry-level work:

- Customer and Personal Service
  - Assessing customer needs
  - Meeting quality standards for service
  - Active Listening
  - Service Orientation
  - Social Perceptiveness
- Problem resolution skills
- Computer Skills
  - Ability to complete administrative and clerical procedures and systems
- Effective Communication Skills
  - Oral Expression
  - Speech Clarity
  - Persuasion
- Multi-Tasking Skills
- Administration and Management
  - Strategic Planning, resource allocation, and coordination of people and resources
- Proper Appearance
- Accountability and Reliability

#### Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- Certified Hospitality & Tourism Management Professional Certification (CHTMP)
- Certified Guest Service Professional (CGSP)
- Certified Front Desk Representative

**Prerequisites for acquiring credential or certificate:** Successful completion of both HTMP Year 1 and HTMP Year 2 final exams. Students must complete 100 hours of work experience in a qualifying position within the hospitality industry, paid or unpaid.

**Prerequisites for acquiring Guest Service Professional credential:** Students must complete a three-hour online training. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

**Prerequisites for acquiring Front Desk Representative credential:** Students must complete 4-8 hours of online training. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

**Benefits of this level of achievement in job market:** The HTMP program was developed by the American Hotel Lodging Association based upon industry needs. CHTMP certification prepares graduates with the necessary skills to attain entry-level employment in the hospitality industry. Also, the postsecondary benefit is that the learning objectives can be compared to hospitality management courses at four-year and two-year post-secondary

schools. Upon successful completion of both year-end exams, the student will be able to articulate into a school that teaches Education Institute courses or uses Educational Institute textbooks. This encompasses over 1,500 schools around the world.

**Instructor Certification Require:** Secondary Hospitality / Tourism - Amusement and Recreation Attendant is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

**Sources:** National Restaurant Association, [www.onetonline.org](http://www.onetonline.org)

## Priority Sector: Hospitality

### Career Field: Tourism – Tour Guide

#### Skills/Knowledge needed to be prepared for entry-level work:

- Customer and Personal Service
  - Assessing customer needs
  - Meeting quality standards for service
  - Active Listening
  - Service Orientation
  - Social Perceptiveness
- Problem resolution skills
- Effective Communication Skills
  - Oral Expression
  - Speech Clarity
  - Persuasion
- Multi-Tasking Skills
- Administration and Management
  - Strategic Planning, resource allocation, and coordination of people and resources
- Proper Appearance
- Accountability and Reliability

#### Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- Certified Hospitality & Tourism Management Professional Certification (CHTMP)
- Certified Guest Service Professional (CGSP)
- Certified Front Desk Representative (CFDR)

**Prerequisites for acquiring credential or certificate:** Successful completion of both HTMP Year 1 and HTMP Year 2 final exams. Students must complete 100 hours of work experience in a qualifying position within the hospitality industry, paid or unpaid.

**Prerequisites for acquiring Guest Service Professional credential:** Students must complete a three-hour online training. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

**Prerequisites for acquiring Front Desk Representative credential:** Students must complete 4-8 hours of online training. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

**Benefits of this level of achievement in job market:** The HTMP program was developed by the American Hotel Lodging Association based upon industry needs. CHTMP certification prepares graduates with the necessary skills

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to attain entry-level employment in the hospitality industry. Also, the postsecondary benefit is that the learning objectives can be compared to hospitality management courses at four-year and two-year post-secondary schools. Upon successful completion of both year-end exams, the student will be able to articulate into a school that teaches Education Institute courses or uses Educational Institute textbooks. This encompasses over 1,500 schools around the world.

**Instructor Certification Require:** Secondary Hospitality / Tourism – Tour Guide is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

**Sources:** National Restaurant Association, [www.onetonline.org](http://www.onetonline.org)

## Priority Sector: Hospitality

### Career Field: Culinary – Prep Cook

#### Skills/Knowledge needed to be prepared for entry-level work:

- Knife Skills
- Customer Service
- Food Safety Management
  - Proper food storage and handling techniques
  - Clean food preparation areas, facilities or equipment
- Cost Control
- Culinary Techniques
- Purchasing and inventory
- Marketing and the menu
  - Knowledge of raw materials
  - Techniques for maximizing the effective manufacture and distribution of goods
  - Planning menu options
- Accountability
- Dependability and presentation
- Communication Skills
- Use of computers, POS systems, cash registers
- Teamwork Skills

#### Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- American Culinary Federation (ACF) accreditation for culinary education (ACF)
- ProStart National Certificate of Achievement (COA)
- ServSafe Food Safety Manager Certification
- ServSafe Allergen Training Certification

**Prerequisites for acquiring ProStart COA credential or certificate:** Successful completion of Year One and Year Two Exams. Students must obtain a paid or un-paid internship and complete 400 hours of work experience and demonstrate proficiency on more than 50 workplace competencies.

**Prerequisite for acquiring a ServSafe Food Safety Manager Certification and ServSafe Allergen Training: State of RI Requirements;** Successful completion of 15 hours of classroom training. Students must receive a 75% or higher on the exam to become certified. Once the student is certified, they must register with the state of Rhode Island Department of Health. This certification is valid for 3 years, statewide. Every 3 years, the student must re-certify by taking a 6-hour refresher course and then resubmit with the DOH. If the student would like to maintain their national certification, the student must take the course and exam every 5 years. The state of RI recognizes the allergen training covered in the ServSafe Food Safety Manager Training as being certified. Other states, however, require a separate online Allergen Training.

**Benefits of this level of achievement in job market:** The ProStart Program was developed by The National Restaurant Association to meet industry needs. It is offered in all 50 states and U.S. Military bases around the world. ProStart Certification prepares graduates with the necessary skills to attain entry-level employment in the RIDE – October 23, 2017

foodservice/culinary industry. Also, the postsecondary benefit is that top post-secondary schools in the nation recognize the ProStart COA and award students with college credits, advanced placement and/or credit for work experience.

**Instructor Certification Require:** Secondary Hospitality / Culinary – Prep Cook is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

**Sources:** National Restaurant Association, [www.onetonline.org](http://www.onetonline.org)

## Priority Sector: Hospitality

### Career Field: Hotel Operations – Room Attendant

#### Skills/Knowledge needed to be prepared for entry-level work:

- Customer and Personal Service
  - Assessing customer needs
  - Meeting quality standards for service
  - Active Listening
  - Provide quality and timely service
- Respond to emergencies
  - Security policies and procedures; proper reporting
- Problem resolution skills
  - Respond and resolve requests and complaints by guests.
- Effective Communication Skills
  - Oral Expression
  - Oral Comprehension
  - Speech Clarity
- Ensure security of guest belongings
- Industry Terminology
- Proper Appearance
- Accountability and Reliability
  - Attention to detail
  - Organization and time management skills
- Understanding proper cleaning techniques and procedures
- Teamwork
  - The ability to remain flexible in job duties and assignments
  -

#### Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- Certified Hospitality & Tourism Management Professional Certification (CHTMP)
- Certified Guest Service Professional (CGSP)
- Certified Guestroom Attendant (CGA)

**Prerequisites for acquiring CHTMP credential or certificate:** Successful completion of both HTMP Year 1 and HTMP Year 2 final exams. Students must complete 100 hours of work experience in a qualifying position within the hospitality industry, paid or unpaid.

**Prerequisites for acquiring Guest Service Professional credential:** Students must complete a three-hour online training. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

**Prerequisites for acquiring Guestroom Attendant credential:** Students must complete 4-8 hours of online training. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.



**Benefits of this level of achievement in job market:** The HTMP program was developed by the American Hotel Lodging Association based upon industry needs. CHTMP certification prepares graduates with the necessary skills to attain entry-level employment in the hospitality industry. Also, the postsecondary benefit is that the learning objectives can be compared to hospitality management courses at four-year and two-year post-secondary schools. Upon successful completion of both year-end exams, the student will be able to articulate into a school that teaches Education Institute courses or uses Educational Institute textbooks. This encompasses over 1,500 schools around the world.

**Instructor Certification Require:** Secondary Hospitality / Hotel Operations – Room Attendant is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

**Sources:** American Hotel and Lodging Association, TPG job descriptions; [www.onetonline.org](http://www.onetonline.org);

## Priority Sector: Hospitality

### Career Field: Hotel Operations – Laundry Attendant

#### Skills/Knowledge needed to be prepared for entry-level work:

- Customer and Personal Service
  - Assessing customer needs
  - Meeting quality standards for service
  - Active Listening
  - Provide quality and timely service
- Respond to emergencies
  - Security policies and procedures; proper reporting
- Problem resolution skills
  - Respond and resolve requests and complaints by guests.
- Effective Communication Skills
  - Oral Expression
  - Oral Comprehension
  - Speech Clarity
- Industry Terminology
- Proper Appearance
- Accountability and Reliability
  - Attention to detail
  - Organization and time management skills
- Understanding proper cleaning techniques and procedures
- Teamwork
  - The ability to remain flexible in job duties and assignments
  -

#### Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- Certified Hospitality & Tourism Management Professional Certification (CHTMP)
- Certified Guest Service Professional (CGSP)

**Prerequisites for acquiring CHTMP credential or certificate:** Successful completion of both HTMP Year 1 and HTMP Year 2 final exams. Students must complete 100 hours of work experience in a qualifying position within the hospitality industry, paid or unpaid.

**Prerequisites for acquiring Guest Service Professional credential:** Students must complete a three-hour online training. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

**Benefits of this level of achievement in job market:** The HTMP program was developed by the American Hotel Lodging Association based upon industry needs. CHTMP certification prepares graduates with the necessary skills to attain entry-level employment in the hospitality industry. Also, the postsecondary benefit is that the learning objectives can be compared to hospitality management courses at four-year and two-year post-secondary schools. Upon successful completion of both year-end exams, the student will be able to articulate into a school

that teaches Education Institute courses or uses Educational Institute textbooks. This encompasses over 1,500 schools around the world.

**Instructor Certification Require:** Secondary Hospitality/ Hotel Operations – Laundry Attendant is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

**Sources:** American Hotel and Lodging Association, TPG job descriptions, [www.onetonline.org](http://www.onetonline.org)

## Priority Sector: Hospitality

### Career Field: Hotel Operations – Guest Room Service Agent

#### Skills/Knowledge needed to be prepared for entry-level work:

- Customer and Personal Service
  - Assessing customer needs, problem resolution
  - Meeting quality standards for service
  - Active Listening
  - Positive and Professional Attitude
- Operating phone system and computer systems
  - The ability to answer guest calls
  - Operating fax, email and Property Management Systems
- Respond to emergencies
  - Security policies and procedures
  - Be the liaison between the hotel and emergency services
- Effective Communication Skills
  - Oral Expression
  - Oral Comprehension
  - Speech Clarity
- Multi-Tasking Skills
- Industry Terminology
- Proper Appearance
- Accountability and Reliability
- Teamwork
  - The ability to work with various departments throughout the property
  -

#### Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- Certified Hospitality & Tourism Management Professional Certification (CHTMP)
- Certified Guest Service Professional (CGSP)
- Certified Front Desk Representative

**Prerequisites for acquiring CHTMP credential or certificate:** Successful completion of both HTMP Year 1 and HTMP Year 2 final exams. Students must complete 100 hours of work experience in a qualifying position within the hospitality industry, paid or unpaid.

**Prerequisites for acquiring Guest Service Professional credential:** Students must complete a three-hour online training. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

**Prerequisites for acquiring Front Desk Representative credential:** Students must complete 4-8 hours of online training. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

**Benefits of this level of achievement in job market:** The HTMP program was developed by the American Hotel Lodging Association based upon industry needs. CHTMP certification prepares graduates with the necessary skills to attain entry-level employment in the hospitality industry. Also, the postsecondary benefit is that the learning objectives can be compared to hospitality management courses at four-year and two-year post-secondary schools. Upon successful completion of both year-end exams, the student will be able to articulate into a school that teaches Education Institute courses or uses Educational Institute textbooks. This encompasses over 1,500 schools around the world.

**Instructor Certification Require:** Secondary Hospitality / Hotel Operations – Guest Room Service Agent is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

**Sources:** American Hotel and Lodging Association, [www.onetonline.org](http://www.onetonline.org)

## Priority Sector: Hospitality

### Career Field: Tourism – Travel Agent

#### Skills/Knowledge needed to be prepared for entry-level work:

- Customer and Personal Service
  - Assessing customer needs
  - Meeting quality standards for service
  - Active Listening
  - Service Orientation
  - Social Perceptiveness
- Problem resolution skills
- Effective Communication Skills
  - Oral Expression
  - Speech Clarity
  - Persuasion
- Multi-Tasking Skills
- Geography knowledge
- Knowledge of principles and methods for moving people or goods by air, rail, sea or road
- Administration and Management
  - Strategic Planning, resource allocation, and coordination of people and resources
- Proper Appearance
- Accountability and Reliability

#### Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- Certified Hospitality & Tourism Management Professional Certification (CHTMP)
- Certified Guest Service Professional (CGSP)
- Certified Front Desk Representative

**Prerequisites for acquiring CHTMP credential or certificate:** Successful completion of both HTMP Year 1 and HTMP Year 2 final exams. Students must complete 100 hours of work experience in a qualifying position within the hospitality industry, paid or unpaid.

**Prerequisites for acquiring Guest Service Professional credential:** Students must complete a three-hour online training. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

**Prerequisites for acquiring Front Desk Representative credential:** Students must complete 4-8 hours of online training. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

**Benefits of this level of achievement in job market:** The HTMP program was developed by the American Hotel Lodging Association based upon industry needs. CHTMP certification prepares graduates with the necessary skills to attain entry-level employment in the hospitality industry. Also, the postsecondary benefit is that the learning objectives can be compared to hospitality management courses at four-year and two-year post-secondary

schools. Upon successful completion of both year-end exams, the student will be able to articulate into a school that teaches Education Institute courses or uses Educational Institute textbooks. This encompasses over 1,500 schools around the world.

**Instructor Certification Require:** Secondary Hospitality / Tourism – Travel Agent is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

**Sources:** National Restaurant Association, [www.onetonline.org](http://www.onetonline.org)

## Priority Sector: Hospitality

### Career Field: Culinary - Baker

#### Skills/Knowledge needed to be prepared for entry-level work:

- Knife Skills
  - Use of cutlery, molds, commercial ovens and forming machines
- Customer Service
- Food Safety Management
  - Proper food storage and handling techniques
  - Clean food preparation areas, facilities or equipment
- Cost Control
- Culinary Techniques
- Purchasing and inventory
- Marketing and the menu
  - Knowledge of raw materials
  - Techniques for maximizing the effective manufacture and distribution of goods
  - Planning menu options
- Accountability
- Dependability and presentation
- Communication Skills
- Use of computers, POS systems, cash registers
- Teamwork Skills

#### Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- ProStart National Certificate of Achievement (COA)
- ServSafe Food Safety Manager Certification
- ServSafe Allergen Training Certification

**Prerequisites for acquiring ProStart COA credential or certificate:** Successful completion of Year One and Year Two Exams. Students must obtain a paid or un-paid internship and complete 400 hours of work experience and demonstrate proficiency on more than 50 workplace competencies.

**Prerequisite for acquiring a ServSafe Food Safety Manager Certification and ServSafe Allergen Training: State of RI Requirements;** Successful completion of 15 hours of classroom training. Students must receive a 75% or higher on the exam to become certified. Once the student is certified, they must register with the state of Rhode Island Department of Health. This certification is valid for 3 years, statewide. Every 3 years, the student must re-certify by taking a 6-hour refresher course and then resubmit with the DOH. If the student would like to maintain their national certification, the student must take the course and exam every 5 years. The state of RI recognizes the allergen training covered in the ServSafe Food Safety Manager Training as being certified. Other states, however, require a separate online Allergen Training.

**Benefits of this level of achievement in job market:** The ProStart Program was developed by The National Restaurant Association to meet industry needs. It is offered in all 50 states and U.S. Military bases around the world. ProStart Certification prepares graduates with the necessary skills to attain entry-level employment in the

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foodservice/culinary industry. Also, the postsecondary benefit is that top post-secondary schools in the nation recognize the ProStart COA and award students with college credits, advanced placement and/or credit for work experience.

**Instructor Certification Require:** Secondary Hospitality / Culinary - Baker is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

**Sources:** National Restaurant Association, [www.onetonline.org](http://www.onetonline.org)

## Priority Sector: Information Technology

### Career Field: Entry-level Networking (Cisco Certified Network Associate – CCNA)

#### Technical Skills:

- Understand how different network technologies and tools interact to form a secure IT network.
- Explain how a computer network works and how it interacts with networked devices.
- Configure, verify and troubleshoot a switch with VLAN & interswitch communications.
- Implement an IP addressing scheme and IP Services to meet specific network requirements.
- Configure, verify and troubleshoot routing and router operations on current Cisco devices.
- Describe, setup, verify, and execute appropriate tasks for wireless local area networks (WLAN)
- Implement & support Network Address Translation (NAT) and Access Control Lists (ACLs) in various environments.
- Identify network security threats and describe threat mitigation methods & countermeasures.

#### Work readiness Skills:

- Excellent customer service and interpersonal skills; telephone etiquette.
- Strong oral and written communication skills (both technical and non-technical)
- Highly effective active listening skills, questioning, and issue management
- Demonstrated problem-solving skills
- Demonstrate excellent follow-through
- Team player
- Self-motivated
- Highly organized
- Commitment and willingness to continually learn new products and technologies

**Expected industry credential(s) and/or certificate(s) granted upon successful completion of the program (if applicable):** Cisco Certified Network Associate (CCNA) Certification; Bachelor's Degree; and/or Associates Degree. 12-18 months' work experience preferred.

**Benefits of this level of achievement in job market:** While this is an entry point for employment for job seekers in the Computer Networking pathway, a successful candidate is better prepared if applicant resume demonstrates a long-term internship/work experience plus some postsecondary training in computers or engineering.

**Job Outlook** - Employment opportunities for Information Technology show high growth (validated by the Bureau of Labor Statistics) and as of June 2016 incorporates an expanded definition of Information Technology occupations by using NAICS codes to identify high-tech industries in Rhode Island. In 2013 total employment across these more than 2,200 high-tech industry establishments was more than 20,700 workers accounting for 5.2% of Rhode Island private sector employment. \* Employers are stating that Information Technology positions are difficult to fill and Labor Market Information projections demonstrate employment growth of 17% between 2012 – 2022\*\*.

**Pay** – The entry-level median annual wage for CCNA is \$45,550.00 (\$21.90 per hour) in January 2016.

**Instructor Certification Requirements** – Secondary Information Technology/ Networking (Cisco Certified Network Associate – CCNA) is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

\* *Enter IT RI, An analysis and report of in-demand IT skill sets; Bridge Technical Talent & Tech Collective.*

\*\* *RI Department of Labor and Training Labor Market Information 2022 Occupational Outlook.*

## Priority Sector: Information Technology

### Career Field: Service Desk Specialist

#### Technical Skills:

- Provide a single point of contact for all users of the company's infrastructure computing environment
- Understand support model and respond to questions or issues in accordance with standards and service levels
- Monitor, manage, and escalate all incidents from start to finish according to Service Level Agreements
- Receive and record all calls from users
- Directly address common requests/issues
- Provide initial assessment of all incidents
- Resolve basic incidents and requests
- Make first attempt at incident resolution and/or effectively determine when incident should be escalated to 2nd level support staff based on standards and guidelines in place
- Consult more senior members of staff before providing "ad hoc" information regarding a service incident
- Keep users informed of status and progress of incidents
- Ensure calls are properly entered into call tracking systems in timely manner
- Thorough understanding of Service Desk telephone system and call trouble ticket process
- Strong understanding of the PC client computing infrastructure
- Knowledge of Windows operating systems, MS Office products, PC configurations, PC hardware, and networking.

#### Work readiness Skills:

- Excellent customer service and interpersonal skills; telephone etiquette.
- Strong oral and written communication skills (both technical and non-technical)
- Highly effective active listening skills, questioning, and issue management
- Demonstrated problem-solving skills
- Demonstrate excellent follow-through
- Team player
- Self-motivated
- Highly organized
- Commitment and willingness to continually learn new products and technologies

**Expected industry credential(s) and/or certificate(s) granted upon successful completion of the program (if applicable):** Bachelor's Degree; and/or Associates Degree. 12-18 months' work experience preferred.

**Benefits of this level of achievement in job market:** While this is an entry point for employment for job seekers in the Information Technology pathway, a successful applicant is better prepared if applicant resume demonstrates a long-term internship/work experience plus some postsecondary training in Computer Studies and General Information Processing.

**Job Outlook** - Employment opportunities for Information Technology show high growth (validated by the Bureau of Labor Statistics) and as of June 2016 incorporates an expanded definition of Information Technology occupations by using NAICS codes to identify high-tech industries in Rhode Island. In 2013 total employment

across these more than 2,200 high-tech industry establishments was more than 20,700 workers accounting for 5.2% of Rhode Island private sector employment. \* Employers are stating that Information Technology positions are difficult to fill and Labor Market Information projections demonstrate employment growth of 17% between 2012 – 2022\*\*.

**Pay** – The entry-level median annual wage for Help Desk Specialist is \$26,499.00 (\$12.74 per hour) in May 2016.

**Instructor Certification Requirements** – Secondary Information Technology/Service Desk Specialist is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

*\* Enter IT RI, An analysis and report of in-demand IT skill sets; Bridge Technical Talent & Tech Collective.*

*\*\* RI Department of Labor and Training Labor Market Information 2022 Occupational Outlook.*

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## Priority Sector: Law, Public Safety & Government

### Career Field: Law Enforcement

#### Skills/ knowledge needed to be prepared for entry-level work:

1. Knowledge of the law
2. Community relations
3. Departmental procedures
4. Leadership skills
5. Physical Stamina/Physical Strength
6. Communication Skills - Report Writing

**Required curriculum:** Roger Williams University, a Rhode Island Department of Education approved curriculum consists of a three/four course sequence: Introduction to Criminal Justice; Law & Society; Forensics Science. Optional Courses: Sociology and/or Psychology.

#### Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):

1. National Incident Management System Training (NIMS)
2. First Aid/CPR
3. OSHA 10-General Standards
4. NOCTI – Criminal Justice
5. Certificate of Completion (meeting all standards)

**Prerequisites for acquiring credential or certificate:** Candidates must be U.S. citizens, usually at least 21 years old, and able to meet rigorous physical and personal qualifications.

**Benefits of this level of achievement in job market:** Prepares student with entry-level skills to obtain employment with certain specific Criminal Justice (Police and Corrections) agencies within Rhode Island.

**Job Outlook:** Employment of police and detectives is projected to grow 4 percent from 2014 to 2024, slower than the average for all occupations. The continued desire for public safety is expected to lead to new openings for officers, although demand may vary by location.

**Pay:** The median annual wage the profession of a police officer was \$43,742.40 (\$21.03 per hour) in May 2016. The median annual wage for the profession of Correctional Officers/Bailiffs was \$42,820.00 (\$20.59 per hour) in May 2016.

**Instructor Certification Requirement:** Secondary Grades Career and Technical Education Teacher, Grades 7-12 - Criminal Justice considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI Certification requirements.

## Priority Sector: Law, Public Safety & Government

### Career Field: Emergency Medical Responder\*

#### Skills/ knowledge needed to be prepared for entry-level work:

1. Use knowledge of the EMS system, safety/well-being of the EMR, and medical/legal issues at the scene of an emergency while awaiting a higher level of care;
2. Have awareness of local public health resources and the role of EMR personnel in public health emergencies;
3. Use simple medical and anatomical terms;
4. Use simple knowledge of the anatomy and function of the upper airway, heart, vessel, blood, lungs, skin, muscles and bones the foundation of emergency care;
5. Use simple knowledge of age-related differences to assess and care for patients;
6. Apply knowledge (fundamental depth, foundational breadth) of general anatomy and physiology to assure patent airway, adequate mechanical ventilation and respiration while awaiting additional EMS response for patients of all ages;
7. Use simple knowledge of shock and respiratory compromise to respond to life threats;
8. Use assessment information to recognize shock, respiratory failure or arrest, and cardiac arrest based on assessment findings, and manage the emergency while awaiting additional emergency response;
9. Conduct Patient assessment;
10. Conduct primary assessment;
11. Take history and vital signs;
12. Use scene information and simple patient assessment findings to identify and manage immediate life threats and injuries within the scope of practice of the EMR;
13. Practice principles of communicating with patients in a manner that achieves a positive relationship;
14. Recognize and manage life threats based on assessment findings of a patient with a medical emergency while awaiting additional emergency response;
15. Identify and categorize trauma patients and activate the appropriate trauma system approach;
16. Use knowledge of EMR systems to recognize and manage life threats related to trauma/shock, resuscitation, and trauma such as bleeding and shock, chest and abdominal emergencies, soft tissue injuries, injuries to head and spine, musculoskeletal injuries, and environmental emergencies;
17. Recognize and manage life threats based on assessment findings for a patient with special needs such as obstetrics and neonatal care, pediatric emergencies, geriatric patients, and patients with special challenges and situations while awaiting additional emergency response;
18. Use knowledge of operational roles and responsibilities to ensure patient, public, and personal safety.

#### Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable)

1. First Aid;
2. CPR/AED;
3. Certificate of Completion (meeting all standards).

**Prerequisites for acquiring credential or certificate:** The students, who wish to become a skilled EMT in Rhode Island, have to go through an EMT training program and may have to provide a Bureau of Criminal Identification (BCI) report. Student must be 18 years old with a high school diploma.

**Benefits of this level of achievement in job market:** This course is a preparatory course to the EMT course and instructs students in basic knowledge, application, and skills of an emergency medical responder. Students who successfully complete this course would be able to volunteer as a medical responder and/or gain employment where CPR, First Aid, and/or AED certificates are required.

**Job Outlook** - Employment of emergency medical technicians (EMTs) and paramedics is projected to grow 24 percent from 2014 to 2024, much faster than the average for all occupations. Emergencies, such as car crashes, natural disasters, and acts of violence, will continue to create demand for EMTs and paramedics.

**Pay** – The most recent Rhode Island Labor Market Information for this profession dates from May 2017 and the entry-level wage for Emergency Medical Responder at that time was \$36,254.40.00 (\$17.43 per hour).

**Instructor Certification Requirements** - Secondary Health Careers/Emergency Medical Responder is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI Certification requirements.

**\*Approved standard under the Health Careers/Medical Pathways**

## Priority Sector: Law, Public Safety & Government

### Career Field: Legal Services, Paralegal

#### Skills/ knowledge needed to be prepared for entry-level work:

1. Community relations
2. Departmental procedures/Organizational skills
  - a. Examine statutes, articles, constitutions, codes, etc. for the preparation of documents
  - b. Maintain files and preparing affidavits
  - c. Oversee the organization of legal volumes and ensure all volumes are accurate and up-to-date
3. Leadership skills
4. Communication Skills - Report Writing
  - a. Serve as an arbitrator or mediator between parties in dispute
  - b. Investigate facts and laws to determine causes of action for case preparation purposes

**Required Curriculum:** Roger Williams University, a Rhode Island Department of Education approved curriculum consists of a three/four course sequence: Introduction to Criminal Justice; Law & Society; Forensics Science. Optional Courses: Sociology and/or Psychology.

**Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):** NOCTI Legal Services

**Prerequisites for acquiring credential or certificate:** Most paralegals and legal assistants have an associate's degree or a certificate in paralegal studies. In some cases, employers may hire college graduates with a bachelor's degree but no legal experience or specialized education and train them on the job.

**Benefits of this level of achievement in job market:** Employment of paralegals and legal assistants is projected to grow 8 percent from 2014 to 2024, about as fast as the average for all occupations. This occupation attracts many applicants, and competition for jobs will be strong. Experienced, formally trained paralegals with strong computer and database management skills should have the best job prospects.

**Job Outlook** - Employment of paralegals and legal assistants is projected to grow 8 percent from 2014 to 2024, about as fast as the average for all occupations. This occupation attracts many applicants, and competition for jobs will be strong. Experienced, formally trained paralegals with strong computer and database management skills should have the best job prospects.

**Pay** – The median annual wage for paralegals and legal assistants was \$49,500 (\$23.80) in May 2016.

**Instructor Certification Requirement:** Secondary Grades Career and Technical Education Teacher, Grades 7-12 - Criminal Justice considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI Certification requirements.



## Priority Sector: Law, Public Safety & Government

### Career Field: Military

#### Skills/ knowledge needed to be prepared for entry-level work:

Students should be exposed to the following skills or knowledge in order to prepare for entry-level work as enlisted personnel

- Personal management skills. Students will learn how to manage and organize their time and learn how to maintain a healthy balance so they can assess and respond to varied situations
- Communication skills. Students will learn how to interact with others, present information to varied audiences and respond in an appropriate manner
- Teamwork skills. Students will learn how to work collaboratively with a diverse group to solve problems, plan, and achieve the mission and vision of the organization
- Physical fitness skills. Students must engage in and be exposed to varied and multiple physical fitness activity\ies in order to participate in or support situations that may involve challenging or difficult topography.
- Healthy lifestyle skills: Students must achieve and maintain a healthy lifestyle in order to be prepared for emergency and non-emergency situations
- Critical thinking skills; Students must learn to solve problems and handle stressful situations that may arise in a combat or crisis situation
- Leadership skills. Students must develop l skills in order to plan, organize, and lead others to maintain order, respond to problematic situations and resolve crises during challenging situations.

**Required Curriculum:** The curriculum is dictated by the specific branch of service: Naval Science; Army Service, Marines; and Airforce.

#### Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):

Students who complete a JROTC program are eligible to receive scholarship awards at ROTC participating colleges.

Students who complete a JROTC program are eligible for advanced rank and pay when enlisting in a branch of the service

Students may receive training for and certification from a variety of licenses depending on the branch of ROTC. For example, students in the Air Force JROTC program can receive training and be eligible for the pilot exam.

**Prerequisites for acquiring credential or certificate:** Students may opt to participate in an ROTC program at the postsecondary level if they plan to pursue an Officer pathway. Students who participate in college ROTC may receive full financial scholarship in exchange for a service commitment upon graduation.

**Benefits of this level of achievement in job market:** Each year, the service establishes recruiting goals to replace people completing their term of service or who are leaving the military through retirement or other for other reasons. In May of 2015, more than 2.3 million people served in the Armed Forces.

**Job Outlook -**

According to the U.S. Bureau of Labor and Statistics Occupational Outlook Handbook, opportunities for qualified individuals to fill entry-level and professional positions as members of the Armed Forces are very good as individuals move up through the ranks, leave the service, and or retire. Individuals who enlist in the service select from a variety of career fields. These fields are Accounting, Budget and Finance; Arts, Communications, Media and Design; Aviation; Business Administration and Operations; Combat Operations, Communications Equipment Technicians, Construction, Building and Extraction; Counseling, Social Work and Human Services, Education and Training; Engineering and Scientific Research, Environmental Health and Safety and Health Care Practitioners. Within each of these fields are a variety of positions for both enlisted personnel and officers.

**Pay -** Basic pay is based on rank and time in service. Students who complete a JROTC program will receive advanced rank and pay when enlisting in the service. This results in an increase of approximately \$2400 a year for entry-level enlisted personnel plus the advancement in rank:

- Entry-Level as an enlisted personnel....\$21,520 (E2-w/less than 2 yrs.)
- Mid-level as an enlisted personnel...\$38,563.20 (E-5 w/10 yrs.)
- Mid-level as a warrant officer... \$55,123.20 (W-2 w/10 yrs.)
- Midlevel as an officer...\$87,116.40 (O-5 w/10yrs)

In addition, enlisted personnel and officers receive free housing for an on base residence and a housing allowance for off base residence.

There are other benefits to the service such as education credit, and health coverage provided by the U.S. Veterans program.

**Instructor Certification Requirement:** JROTC programs are taught by retired officers, warrant officers and noncommissioned officers who are determined by Cadet Command to meet the requirements of the specific branch of the ROTC program. The retired candidate must be retired in the rank of E-6 through E-9, WO-1 through WO-5, and O3 through O6 and must meet other requirements of the Cadet Command. In addition, they must meet the Rhode Island Department of Education requirements for teacher and Career and Technical Education Teacher Certificate.

## Priority Sector: Manufacturing

### Career Field: Entry-level Manufacturing

**Skills:** Essential foundational skills needed for success in jobs across a variety of industries and occupations. Students must be able to successfully complete three assessments: Applied Mathematics, Locating Information, and Reading for Information.

**Knowledge needed to be prepared for entry-level work:** These measure a range of essential work skills, including the ability to:

- Perform basic mathematic operations relevant to the workplace;
- Read and understand documents commonly found in the workplace;
- Find information presented in common workplace graphics;
- Set up and solve complex work-related math problems;
- Determine the relevance of written information to work-related tasks;
- Apply information derived from graphics to work-related problems.

#### Required Curriculum:

**Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):** National Career Readiness Certificate (ACT NCRC). Students must successfully complete the three ACT WorkKeys assessments: Applied Mathematics, Locating Information, and Reading for Information. Student must achieve silver, gold or platinum score to demonstrate that they have the requisite baseline skills to enter workforce.

**Entry-Level Education:** High school diploma or equivalent

**Prerequisites for acquiring credential or certificate:** None

**Benefits of this level of achievement in the job market:** Manufacturing has opportunities for workers with a range of backgrounds. Some qualities and skills are often required. Workers also need a combination of education and training, which varies by occupation. For example, electrical and electronic equipment assemblers typically need a high school diploma or the equivalent plus on-the-job training of 1 month or less.

**Job Outlook\*:** Employment of machinists and tool and die makers is projected to grow 6 percent from 2014 to 2024, about as fast as the average for all occupations. Workers familiar with computer software applications and who can perform multiple tasks in a machine shop will have the best job opportunities.

**Pay\*\*:** The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for Manufacturing at that time was \$35,048.00 (\$16.85 per hour).

**Instructor Certification Requirements:** Secondary Advanced Manufacturing /Entry-level Manufacturing is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

\* US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook

\*\* RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics

## Priority Sector: Manufacturing

### Career Field: Entry-level Manufacturing and above (Machinists and Tool & Die Makers)

**Skills:** Essential technical skills needed for success in jobs across a variety of advanced manufacturing occupations. Students need to demonstrate mastery of the core competencies of manufacturing production at the front-line (entry-level through front-line supervisor).

**Knowledge needed to be prepared for entry-level work:**

- Safety
- Quality Practices & Measurement
- Manufacturing Processes & Production
- Maintenance Awareness
- Green Production (optional)

**Required Curriculum:** The key activities for the four critical functions (as well as the Green certificate) are found on page 3.

**Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):** Manufacturing Standards Skills Council (MSSC) Certified Production Technician (CPT) program. Students must earn the first four certificates to receive the full CPT certification (Note: Green Production is not presently required for full-CPT). A student can earn a Certificate if they pass one or more assessments. However, they must pass all four assessments to earn the full CPT certification.

**Entry-Level Education:** High School diploma or equivalent

**Prerequisites for acquiring credential or certificate:** National Career Readiness Certificate (ACT NCRC); student must achieve at least a silver level score.

**Benefits of this level of achievement in job market:** The goal of the CPT certification program is to raise the level of performance of production workers both to assist the individuals in finding higher-wage jobs and to help employers ensure their workforce increases the company's productivity and competitiveness.

**Job Outlook\*:** Employment of machinists and tool and die makers is projected to grow 6 percent from 2014 to 2024, about as fast as the average for all occupations. Workers familiar with computer software applications and who can perform multiple tasks in a machine shop will have the best job opportunities.

**Pay\*\*:** The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for Manufacturing entry-level and above was \$24,960.00 (\$12.00 per hour).

**Instructor Certification Requirements:** Secondary Advanced Manufacturing / Entry-level Manufacturing and above (Machinists and Tool & Die Makers) is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

**MSSC CRITICAL PRODUCTION FUNCTIONS****SAFETY**

1. Work in a Safe and Productive Manufacturing Workplace
2. Perform safety and environmental inspections
3. Perform emergency drills and participate in emergency teams
4. Identify unsafe conditions and take corrective action
5. Provide safety orientation for all employees
6. Train personnel to use equipment safely
7. Suggest processes and procedures that support safety of work environment
8. Fulfill safety and health requirements for maintenance, installation, and repair
9. Monitor safe equipment and operator performance
10. Utilize effective, safety-enhancing workplace practices

**QUALITY PRACTICES & MEASUREMENT**

1. Participate in periodic internal quality audit activities
2. Check calibration of gages and other data collection equipment
3. Suggest continuous improvements
4. Inspect materials and product/process at all stages to ensure they meet specifications
5. Document the results of quality tests
6. Communicate quality problems.
7. Take corrective actions to restore or maintain quality
8. Record process outcomes and trends
9. Identify fundamentals of blueprint reading
10. Use common measurement systems and precision measurement tools

**MANUFACTURING PROCESSES & PRODUCTION**

1. Identify customer needs
2. Determine resources available for the production process
3. Set up equipment for the production process
4. Set team production goals
5. Make job assignments
6. Coordinate work flow with team members and other work groups
7. Communicate production and material requirements and product specifications
8. Perform and monitor the process to make the product
9. Document product and process compliance with customer requirements
10. Prepare final product for shipping or distribution

**MSSC CRITICAL PRODUCTION FUNCTIONS****MAINTENANCE AWARENESS**

1. Perform preventive maintenance and routine repair
2. Monitor indicators to ensure correct operations
3. Perform all housekeeping to maintain production schedule
4. Recognize potential maintenance issues with basic production systems, including knowledge of when to inform maintenance personnel about problems with:
  - Electrical systems
  - Pneumatic systems
  - Hydraulic systems
  - Machine automation systems
  - Lubrication processes
  - Bearings and couplings
  - Belts and chain drives

**GREEN PRODUCTION (optional)**

1. Train Workers in Environmental Issues
2. Implement & Promote Environmental Program, Projects, Policies or Procedures
3. Conduct Environmental Incident and Hazard Investigations
4. Conduct Preventive Environmental Inspections
5. Monitor Environmental Aspects at Each Stage of Production
6. Implement Continuous Improvement in Environmental Assurance
7. Using Advanced Material in Production to Reduce Waste
8. Reprocess Materials by Recycling and Reuse

\* US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook

\*\* RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics

## Priority Sector: Manufacturing

### Career Field: Entry-level and above Production Manufacturing Specialist

**Skills / knowledge needed to be prepared for entry-level work:** Core industry-wide skills required for skilled production occupations in all sectors of advanced manufacturing. Students need to demonstrate competency in the following areas: (1) Math and Measurement, (2) Spatial Reasoning and Manufacturing Technology, and (3) Business Acumen and Quality.

#### Required Curriculum:

**Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):** Manufacturing Skills Institute (MSI) Manufacturing Technician 1 (MT1) certification. Students must earn the first four certificates to receive the full CPT certification (Note: Green Production is not presently required for full-CPT). A student can earn a Certificate if they pass one or more assessments. However, they must pass all four assessments to earn the full CPT certification.

**Entry-Level Education:** High school diploma or equivalent

**Prerequisites for acquiring credential or certificate:** National Career Readiness Certificate (ACT NCRC; student must achieve at least a silver level score) and Manufacturing Standards Skills Council (MSSC) Certified Production Technician (CPT) program certificates ('Green Production' not required).

#### Benefits of this level of achievement in job market:

The goal of the MT1 certification program is to:

- Develop a workforce pipeline capable of meeting the requirements of existing and emerging employers in advanced technology industries such as manufacturing
- Provide a customized fast track, pathway to stackable credentials for 21st Century advanced technology careers in industry
- Provide online and instructor-led training to address identified technical skill gaps
- Provide a pathway to advanced level training and specialized training based on industry requirements for potential new hires and incumbent workers.

**Job Outlook\*:** Employment of machinists and tool and die makers is projected to grow 6 percent from 2014 to 2024, about as fast as the average for all occupations. Workers familiar with computer software applications and who can perform multiple tasks in a machine shop will have the best job opportunities.

**Pay\*\*:** The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for Manufacturing entry-level and above was \$35,048.00 (\$16.85 per hour).

**Instructor Certification Requirements:** Secondary Advanced Manufacturing / Entry-level and above Production Manufacturing Specialist is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

\* US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook

\*\* RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics

## Priority Sector: Manufacturing

### Career Field: Entry-level and above for any logistical function

**Skills:** Essential technical skills needed for success in jobs across a variety of advanced manufacturing occupations. Students demonstrate their understanding of the core skills and knowledge of logistics through two programs.

**Knowledge needed to be prepared for entry-level work:** The key activities for the two programs are attached.

**Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):** Manufacturing Standards Skills Council (MSSC) Certified Logistics Technician (CLT) program. Students must earn the foundational-level Certified Logistics Associate (CLA) Certificate and the mid-level technical CLT Certification. Before sitting for the CLT assessment, candidates must have a CLA Certificate.

**Prerequisites for acquiring credential or certificate:** National Career Readiness Certificate (ACT NCRC; student must achieve at least a silver level score) and Manufacturing Standards Skills Council (MSSC) Certified Production Technician (CPT) program certificates ('Green Production' not required).

**Benefits of this level of achievement in job market:** The goal of the CLT certification program is to raise the level of performance of logistics workers both to assist the individuals in finding higher-wage jobs and to help employers ensure their workforce increases the company's productivity and competitiveness.

**Job Outlook\*:** The U.S. Department of Labor predicts employment to hold steady, with better trained workers receiving more opportunities.

**Pay\*\*:** The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for Certified Logistics Technician entry-level was \$28,038.00 (\$13.48 per hour).

**Instructor Certification Requirements:** Secondary Advanced Manufacturing / Entry-level and above for any logistical function is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

\* US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook

\*\* RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics

### MSSC LOGISTICS PROGRAMS

#### CERTIFIED LOGISTICS ASSOCIATE (CLA)

1. Global supply chain logistics life cycle
2. Logistics environment
3. Material handling equipment
4. Safety principles
5. Safe material handling and equipment operation
6. Quality control principles
7. Workplace communications
8. Teamwork and workplace behavior to solve problems
9. Using computers



**CERTIFIED LOGISTICS TECHNICIAN (CLT)**

1. Product receiving
2. Product storage
3. Order processing
4. Packaging and shipment
5. Inventory control
6. Safe handling of hazmat materials
7. Evaluation of transportation modes
8. Dispatch and tracking
9. Measurements and metric conversions

## Priority Sector: Manufacturing

### Career Field: Entry-level and above in metalworking industry or function

**Skills:** Skills in the metalworking industry are validated through the National Institute for Metalworking Skills (NIMS) machining and metal-forming certifications. The certifications are earned through secondary, postsecondary, and work-based curricula that include both “hands-on” performance and theory tests. 52 NIMS credentials allow employers to hone their credentialing requirements and choose only those certifications that are applicable to the needs of the company.

#### Knowledge needed to be prepared for entry-level work:

- Measurement, Materials & Safety
- Job Planning, Benchwork & Layout
- Manual Milling Skills I
- Turning Operations: Turning Between Centers
- Turning Operations: Turning Chucking Skills
- Grinding Skills I
- Drill Press Skills I
- CNC Turning: Programming Setup & Operations
- CNC Milling: Programming Setup & Operations

#### Required Curriculum:

**Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):** National Institute for Metalworking Skills (NIMS) machining and metal-forming Machining Level I certification.

**Entry-Level Education:** High school diploma or equivalent

**Prerequisites for acquiring credential or certificate:** National Career Readiness Certificate (ACT NCRC; student must achieve at least a silver level score) and Manufacturing Standards Skills Council (MSSC) Certified Production Technician (CPT) program certificates (‘Green Production’ not required).

**Benefits of this level of achievement in job market:** With NIMS performance measures, the students know clearly what is expected of them whether it is for graduation, hiring or advancement. The NIMS credential clearly demonstrates that the credential holder met the industry benchmark for that competency. Metalworking companies use the credentials as a basis for recruiting, hiring, placement and promotion. The guesswork is removed from the human resource process. Companies can advertise for specific NIMS credentialed skills, preferring or requiring certain credentials.

**Job Outlook\*:** Employment of machinists and tool and die makers is projected to grow 6 percent from 2014 to 2024, about as fast as the average for all occupations. Workers familiar with computer software applications and who can perform multiple tasks in a machine shop will have the best job opportunities.

**Pay\*\*:** The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for Manufacturing entry-level and above was \$35,048.00 (\$16.85 per hour).

**Instructor Certification Requirements:** Secondary Advanced Manufacturing / Entry-level and above in metalworking industry or function is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI certification requirements.

\* US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook

\*\* RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics

## Priority Sector: Marine Technology

### Career Field: Boat Building

#### Skills/ knowledge needed to be prepared for entry-level work:

1. Orientation to the Marine Trades
2. OSHA 10 Safety (Maritime, Construction and/or General)
3. Basic Woodworking and mechanical skills
4. Boatbuilding terminology, materials and methods
5. Related industry math and boat plans and/or blueprint reading
6. Technology specific equipment and basic operational techniques
7. Quality control
8. Work-based learning opportunities
9. Human relations, collaboration and problem solving (see 21st Century Work-readiness Rubric)

**Required Curriculum:** The primary curriculum is American Boat and Yacht Council (ABYC) with integrated units from the NCCER Construction Technology. The three/four courses are: Marine Technology 1; Marine Technology 2; Marine Technology 3; and Marine Technology 4 (where applicable).

**Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):** OSHA-10 (Maritime, Construction and/or General); Rhode Island Marine Trades Association (RIMTA) Certificate of Completion.

**Benefits of this level of achievement in job market:** Prepares student with entry-level skills to obtain employment in the boatbuilding industry.

**Job Outlook:** Using 2014 Marine Trades Skills Gap Study Data, the Rhode Island Marine Trades Association & their third-party consultant, Planning Decisions, defined “the Marine Trades” as encompassing 659 business establishments that employed 6000 people who earned \$268.9 million in wages in seven separate “industries.”

**Pay:** The median annual wage for a boat builder pay is \$37,440.00 (\$18.00 per hour)

**Instructor Certification Requirement:** Secondary/Marine Trades is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI Certification requirements.

## Priority Sector: Marine Technology

### Career Field: Composites

Skills/ knowledge needed to be prepared for entry-level work:

1. Orientation to the Composite Applications & Processes
2. OSHA 10 Safety ((Maritime, Construction and/or General))
3. Composite terminology, materials and methods
4. Related industry math and blueprint reading
  - a. Strong analytical and problem-solving skills
5. Technology specific equipment and basic operational techniques
  - a. General skills with hand tools, such as grinders, jig saw, and sanders
6. Quality control
7. Work-based learning opportunities
8. Human relations, collaboration and problem solving (see 21st Century Work-readiness Rubric)
9. Strong organizational and time management skills

**Required Curriculum:** The primary curriculum is American Composite Manufacturers Association (ACMA). The instructor must hold the American Composite Manufacturers Association (ACMA) Certification. The three/four courses are: Marine Technology 1; Marine Technology 2; Marine Technology 3; and Marine Technology 4 (where applicable).

**Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):** American Composite Manufacturers Association (ACMA) Certification - Certified Composites Technician (CCT); OSHA10 (Maritime, Construction and/or General); and RIMTA Certificate of Completion

**Benefits of this level of achievement in job market:** Prepares students with the skills to obtain employment as an entry-level Composite Technician.

**Job Outlook:** Composites Technician - Using 2014 Marine Trades Skills Gap Study Data, the Rhode Island Marine Trades Association & their third-party consultant, Planning Decisions, defined “the Marine Trades” as encompassing 659 business establishments that employed 6000 people who earned \$268.9 million in wages in seven separate “industries.”

**Pay:** The median annual wage for entry-level composite technicians is \$36,940.80 (\$17.76 per hour)

**Instructor Certification:** Secondary/Marine Trades is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI Certification requirements.

## Priority Sector: Marine Technology

### Career Field: Systems

#### Skills/ knowledge needed to be prepared for entry-level work:

1. Orientation to onboard Electrical, plumbing and propulsion systems
2. OSHA 10 Safety (Maritime, Construction and/or General)
3. Systems terminology, materials and methods
4. Related industry math and schematics reading
5. Technology specific equipment and basic operational techniques
6. Quality control
7. Work-based learning opportunities
8. Human relations, collaboration and problem solving (see 21st Century Work-readiness Rubric)

**Required curriculum:** The primary curriculum is American Boat and Yacht Council (ABYC). The three/four courses are: Marine Technology 1; Marine Technology 2; Marine Technology 3; and Marine Technology 4 (where applicable).

**Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):** OSHA-10; SkillsUSA Marine Service Technology Proficiency Assessment

**Benefits of this level of achievement in job market:** Prepares students with the skills to obtain employment as an entry-level Systems Technician in the Marine Technology trades.

**Job Outlook:** Using 2014 Marine Trades Skills Gap Study Data, the Rhode Island Marine Trades Association & their third-party consultant, Planning Decisions, defined “the Marine Trades” as encompassing 659 business establishments that employed 6000 people who earned \$268.9 million in wages in seven separate “industries.” According to the US Bureau of Labor Statistics, employment of small engine mechanics is projected to grow 4 percent from 2014 to 2024.

**Pay:** The median annual wage for entry-level service technicians was \$35,280.00 (\$16.96 per hour) in May 2016.

**Instructor Certification:** Secondary/Marine Trades is considered a Career and Technical Education Teacher Certificate. Applicants applying for these teaching certificates must meet RI Certification requirements.

## Priority Sector: Pre-Engineering Technology

### Career Field: Technician

This standard is for a high school graduate who is both prepared to enter an engineering program at the post-secondary level and be “job ready” as a technician.

**Skills/ knowledge needed to be prepared for entry-level work:** Upon successful completion of a RIDE approved Pre Engineering pathway, the candidate is expected to know and be able to:

- Assist engineers or scientists in creative tasks such as aiding in product or tool design, setting up experiments, running experiments, recording data and observations, summarizing results, diagnosing flaws, conducting testing, conducting repairs, programming equipment, setting up production equipment and processes, designing tooling, assessing and controlling quality, etc.

**Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):**

High school students interested in becoming a technician supporting engineers should take a standard pre-engineering curriculum of four years of math, plus chemistry, physics and three consecutive years of engineering technology coursework. As a supplement, students can enhance their skills with courses that help develop skills working with their hands, basic information technology (IT) courses, and courses in data analytics such as Microsoft Excel, and Microsoft Access.

These requirements are summarized in the following table

*Each column must be met to satisfy the requirements of the Rhode Island CTE Pre Engineering Technology Standard*

Minimum Academic Requirement		Safety		Mandatory Credential Earned (at least one)		Work based Experience
Three consecutive years of engineering technology coursework  & Four years of math, including at least pre-calculus  &  Chemistry & Physics	+	*Safety Training	+	<b>National Occupational Competency Testing Institute (NOCTI)</b> Pre-Engineering  <b>International Society of Certified Electronics Technicians (ISCET)</b> AC, DC, Semiconductor & Digital  <b>Electronic Technician Association</b> AC, DC, Analog, Digital & Comprehensive  <b>Project Lead the Way</b> Three consecutive Project Lead The Way Course Certificates (including Intro to Engineering Design, and Principles of Engineering)	+	Engineering/industry work based learning experience and/or related mentor program

\*Content equivalent to OSHA 10 hour General Industry training

**Job Outlook:** Per the Rhode Island Department of Labor and Training Occupational Outlook 2024, demand for Architects and Engineers is expected to grow 7.7% over the ten-year period from 2014-2024; a greater rate than Rhode Island job growth overall during the same period (7.1%). Further, there are many other industries that benefit from people with engineering background and skills.

Technician openings are more difficult to measure; as of 2015, there were about three engineering technicians per 1,000 Rhode Island jobs (per US Department of Labor Statistics). Engineering technician job openings typically require an associate's degree and experience. Nonetheless, a high school graduate with these credentials will be very valuable to employers looking to recruit engineers. Such a high school graduate could work as a technician or intern while completing a four-year engineering degree.

**Pay:** Salary depends on the specific technician field entered. Salaries range from \$49,000 a year as a civil engineer technician to Aerospace technician making \$87,000 per year, with the average wage of \$56,000 per the US Department of Labor statistics.



## **Appendix**

### RIDE Industry Specific CTE Program Standards Summary Sheet